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SILVER IN THE SOUTH

Views on the Sherman Act and Free Coinage Expressed by Southern Bankers.

In our issue of last week we presented the views of 200 Southern bankers upon the silver question, and to these we add this week a number of later replies to our inquiries on the subject. The trend of Southern sentiment, as indicated by these replies, is unmistakably against the compulsory purchase of silver bullion by the government or the free coinage of silver.

The replies given below are in response to the following questions:

1. Do you favor the repeal of the entire Sherman silver act, or only the compulsory purchase clause?

2. Are you in favor of the enactment of any law for the free coinage of silver, and if so upon what ratio?

Alabama.

A. L. GLENN, president First National Bank, Gadsden, Ala.: 1. Yes. 2. No.

Florida.

BROOKSVILLE STATE BANK, Brooksville, Fla.: 1. We favor the repeal of the compulsory purchase clause only, believing that the government should have authority to purchase silver when it is needed and to refuse to purchase when it is not needed.

H. S. BUDD, Leesburg, Fla.: 1. All except the repeal of the act of 1878. Treasury notes already issued should remain legal tender and be redeemable in gold at option of holder. 2. Certainly not.

Georgia.

JOHN WINDSOR, cashier People's National Bank, Americus, Ga.: 1. I favor wiping out the Sherman law as demanded by the national Democratic platform. 2. I favor the unlimited coinage of silver by the government at a ratio of, say, twenty to one. There is not enough gold in existence to form a sufficiently broad basis for the redemption of the needed volume of paper, and silver must be coined so as to supplement the deficiency that the single gold standard would cause.

P. H. LANGDON, president National Bank of Augusta, Augusta, Ga.: 1. Repeal entire. 2. Yes, upon the ratio of present equivalent value—about 129 to 130. Any standard that the government may adopt, provided that gold will be paid by the United States for silver coin in multiples of \$5.00 to \$20.00.

JOSEPH J. ROGERS, president New South Savings Bank, Barnesville, Ga.: 1. I favor the repeal, provided some substitute favorable to silver is enacted in its stead. 2. I am decidedly in favor of a law providing for the free coinage of silver, and think the ratio of one to sixteen is about right.

G. T. WIEDENMAN, president Milledgeville Banking Co., Milledgeville, Ga.: 1. Yes. 2. I favor free coinage in like manner as England does in India, but if free coinage has to be, the ratio ought to be no less than twenty-five to one.

O. C. CHEVES, cashier Bank of Jno. F. Lewis & Son, Montezuma, Ga.: 1. I favor its repeal unconditionally. 2. I will answer this by asking one question, viz,

Will the free coinage of silver benefit anybody except owners of the silver mines?

S. L. HAYES, president Thomasville National Bank, Thomasville, Ga.: 1. I am in favor of the entire bill being blotted out. I do not believe, however, that such action can be had at this meeting of Congress, therefore a compromise measure may be best. 2. I am opposed to anything like free coinage, and as long as any such measure is on our statute books we will have unsettled values. I believe in sound money.

Kentucky.

C. HOTOPP, president Bank of Elizabethtown, Ky.: 1. I am not well enough acquainted with the contents of the Sherman act as a whole, but I am opposed to the compulsory purchase clause. I am in favor of a sound currency, a system that will do justice to the whole people regardless of the interests of a class or section. 2. I am not in favor of free coinage of silver.

W. B. SMITH, cashier First National Bank, Glasgow, Ky.: 1. Only the compulsory purchase clause. 2. Am opposed to any law for the free coinage of silver.

H. C. LILLY, president Estill County Deposit Bank, Irvine, Estill county, Ky.: 1. I favor the repeal of the whole act and the passage of an act calling in all bills of less than ten dollars and make silver coin a legal tender for twenty dollars and less sums; that will cause silver to circulate of necessity all over the nation. 2. I am opposed to the free coinage of silver. I think we now have enough silver for all purposes.

R. T. SMITH, cashier Deposit Bank of Monroe county, Tompkinsville, Ky.: 1. The entire act. 2. No.

J. P. AMSDEN, cashier Bank of J. Amsden & Co., Versailles, Ky.: 1. I favor the repeal of the compulsory purchase clause. 2. No.

Louisiana.

BASTROP STATE BANK, Bastrop, La.: 1. We are in favor of the unconditional repeal. 2. We are in favor of carrying out the Democratic platform on the subject, and, of course, on such a ratio as will make a silver dollar worth a gold dollar.

Maryland.

JAS. S. CHAPLAIN, president Trappe Savings Bank, Trappe, Md.: 1. Repeal the Sherman silver act. 2. No.

G. S. HAINES, president First National Bank, Westminster, Md.: 1. I favor the repeal of the entire Sherman silver act. 2. Not in favor of any law for the free coinage of silver nor Congress meddling with the present tariff laws in any way.

Mississippi.

J. M. BILLUPS, president of the Columbus Insurance & Banking Co., Columbus, Miss.: 1. I am in favor of the repeal of the entire Sherman silver act only on condition of an adequate and satisfactory substitute. 2. I favor the enactment of any wise and just law for the free coinage of silver upon the ratio of twenty to one.

A. G. CAMPBELL, president First National Bank, Natchez, Miss.: 1. I favor the repeal of the purchasing clause of the Sherman act, and restore confidence as soon as possible. We can't afford to maintain the present ratio against almost

all the world, and in my opinion the two metals cannot be maintained on any parity.

2. No; the experience of older nations is that parity cannot be maintained; one or the other will go out of circulation. The most valuable will be hoarded, the baser be the currency of the country that tries the experiment. Let the Congressmen read the financial history of England, France, Germany, in fact all of the old countries, and reflect.

EDWARD AARON, banker, Woodville, Miss.: 1. I favor the repeal of the entire Sherman silver act. 2. Am not in favor of the enactment of any law for the free coinage of silver; would favor coinage of silver in sufficient quantity to replace all currency less than \$5.00, which should be legal tender for debts to that amount. Retire all bills and gold under \$5.00.

North Carolina.

W. J. ARMFIELD, president National Bank, High Point, N. C.: 1. I am in favor of the repeal of the entire Sherman act. 2. I am opposed to free coinage of silver unless it can be done on the basis of the actual market value of silver; that is, a dollar's worth of silver to be put in a dollar when coined.

W. E. DANIEL, president Bank of Weldon, Weldon, N. C.: The Democratic platform expresses my views in regard to the questions asked.

South Carolina.

W. H. CLARK, president Carolina National Bank, Columbia, S. C.: 1. I favor the repeal of the Sherman act. 2. I favor the coinage of silver, but upon a proper ratio. What this should be I am not determined. I, however, incline to say twenty to one. Do not, however, regard these measures as exhaustive of our wants. Think we need a complete amendment of our financial system.

W. D. MORGAN, president Bank of Georgetown, Georgetown, S. C.: 1. I am in favor of the repeal of the entire Sherman silver act, believing that it is primarily responsible for the present disturbed condition of finances, and that its repeal will do much to allay distrust and restore confidence. 2. I am in favor of the passage of an act providing for the limited coinage of silver upon a ratio that will maintain the parity of the two metals.

Tennessee.

T. G. MONTAGUE, president First National Bank, Chattanooga, Tenn.: 1. Compulsory purchase clause. 2. No.

Texas.

WM. CLEMENS, president First National Bank, New Braunfels, Texas: 1. I am in favor of its being repealed entirely. 2. I am in favor, after that is done, of a law to coin silver enough—that is to say, in course of time—what we can absorb and use in our inland currency, full legal tender power to be given same; also same to what has already been coined, the silver to be forced into circulation by the Secretary of the Treasury being directed to pay it out in a certain ratio with gold and currency, which ratio may be different in different sections of the country, according to the probable amount in circulation in each section. This ratio, and also the time when enough silver has been coined for above purpose and forced into circulation and when coinage

of silver should be partially or wholly suspended, to be determined in the discretion of the President and cabinet, who must inform the people by proclamation.

Virginia.

W. A. McDOWELL, president Appalachian Bank, Big Stone Gap, Va.: We favor the unconditional repeal of the Sherman silver act, and do not think that we need any substitute for it whatever for the time being. The government has on hand now enough silver in the form of bullion and coin to supply the needs of the people for many years to come, and if at the end of that time we find a substitute is needed for the Sherman act Congress can then act. It certainly has other more important things to deal with right now than a substitute for the Sherman act.

A. L. NELSON, president Bank of Lexington, Lexington, Va.: 1. I am in favor of the repeal of the entire Sherman silver act. 2. I am not in favor of the free coinage of silver.

West Virginia.

JOHN T. SILOR, president Bank of Berkeley Springs, Berkeley Springs, W. Va.: 1. We think it would be well to repeal the entire Sherman silver act, but decidedly the compulsory purchase clause. 2. We believe any law for the free coinage of silver would be useless. We regard it as demonstrated that parity of value cannot be established between gold and silver. Let silver be a commodity.

J. H. BRAMWELL, president Bank of Bramwell, Bramwell, W. Va.: 1. I am in favor of the unconditional repeal of the Sherman silver act, and I favor a more liberal policy from our government towards national bank circulation. 2. No.

J. L. CALDWELL, president First National Bank, Huntington, W. Va.: 1. I fail to see that the repeal of the purchase clause of the Sherman silver act will give any relief to the business interests of our country unless it be substituted by a more liberal law. No greater calamity could befall our country than the demonetization of silver, which seems to be now the drift of the single-standard men of this country. 2. I am in favor of the passage of a coinage act that will give the ratio of silver at sixteen to one. The stamp of our government on the American dollar is a guarantee to me that no American will ever lose anything by that dollar. I fail to see how our government could demonetize silver unless she should redeem all the silver issued by her at its face value and maintain her dignity and honor. Then she would have to sell the same silver money as metal, and should you rob the silver metal of its money power you at once reduce it to one-half of its present value, consequently a loss to our government of many hundred millions of dollars. This deficit could only be paid by our government by an issue of gold bonds, and thus it would place the bonded indebtedness of this country back to the mark we have been now quite thirty years to pay.

A. C. SNYDER, president Bank of Lewisburg, W. Va.: 1. I am in favor of the repeal of the compulsory purchase clause of the Sherman silver act, but not of the entire act at the present. 2. I am opposed to any law for the free coinage of silver,

but am in favor of the repeal of the 10 per cent. tax on State bank issues.

A. J. THOMAS, president People's National Bank, Martinsburg, W. Va.: 1. Repeal entire act. 2. Yes, provided a silver dollar is made equal to a gold dollar—ratio twenty to one.

J. S. HYER, president the Sutton Bank, Sutton, W. Va.: 1. I am in favor of the repeal of the compulsory purchase clause of the Sherman silver act. 2. I am opposed to the free and unlimited coinage of silver. I am also in favor of allowing the national banks of the United States to issue 100 per cent. on deposited bonds instead of only 90 per cent.

Western Foundrymen's Association.

The next meeting of the Western Foundrymen's Association will take place on Wednesday, August 16, at 7:30 P. M., in room 702-703 Temple Court Building, corner of Quincy and Dearborn streets, Chicago. The general subject will be the same as that of the last meeting—"The Chemist as a Factor in Foundry Practice." The discussion will hinge upon the paper presented at the last meeting by Mr. H. O. Chute, and in connection the advisability of securing a chemist for the association who can be consulted by the members of the association in their private business, and who can also make tests to be the public property of the association, will be considered.

Other important business of the meeting will be the election of a president of the association in place of Mr. C. A. Plamondon, whose resignation was accepted at a recent meeting. At the last meeting the names of Mr. Geo. M. Sargent, of the Sargent Co., Chicago, and Mr. Chas. Allis, of the E. P. Allis Co., Milwaukee, were placed in nomination for this office.

It is desired that all members of the association shall be present, and to foundrymen who are not members a cordial invitation to be present and take part in the proceedings is extended.

A North Carolina Gold Mine Sold.

Among the recent sales of mining property that of the Biggers' gold mine in Cabarrus county, N. C., is just announced. The sale was effected by Messrs. R. Eames, Jr., and A. C. Mauney, of Gold Hill, N. C., to the Gold Nugget Co., of New York. The exact price at which the owners secured this property is not known, but it is believed to be in the neighborhood of \$30,000. The property is situated about ten miles from Concord, and lies on the dividing ridge between Dutch Buffalo and Meadow creeks, and situated a short distance north of the famous Reed gold mine, which has heretofore been worked so extensively. It is one of the most recent discoveries of gold in Cabarrus county, and has never been worked but in a small way, owing to the fact that it is a placer gold mine, and is situated upon a very high ridge on which there is but very little water, and the owners heretofore were not able to erect suitable machinery for hydraulic operations.

Richmond's New Elevator.

The new Chesapeake & Ohio grain elevator which is being built in Richmond, Va., will be completed by the 15th of the current month. It has a capacity of 125,000 bushels and is arranged to handle six carloads at one time. The structure will cost \$25,000. The elevator measures fifty by eighty feet and is 125 feet in height. It is built of wood covered from top to bottom with corrugated iron. The interior arrangements are of the latest and most approved pattern, and grain can be unloaded with great ease and celerity. There is a track on each side of the elevator and iron spouts extend from the bin to the cars.

The Financial Strain in the South.

[From the Times-Democrat, New Orleans.]

The present financial trouble has been due rather to lack of confidence than to lack of money, although it is always spoken of as the financial strain. The country had been doing a quiet, conservative business. It had not been extravagant or over-speculative—except in some portions of the West—and there seemed to be no reason to anticipate trouble, when it suddenly "swooped" down upon us in the form of lack of confidence. The depositors lacked confidence in the banks and made a run on them, which caused the suspension of 301 banks, State and national, nineteen-twentieths of which were in a perfectly sound condition, with assets far above their liabilities, but with not enough cash in their vaults to meet the claims of all their depositors at once. Most of the other banks became conservative and even timid, drew in their loans, accumulated as much cash as possible and showed a disposition to grant no favors. This caused inconvenience to all business enterprises, closed up hundreds of factories and threw thousands of employes out of work, thereby increasing the scare.

How senseless these scares have been is well shown in the run last week on the New York savings banks. These banks, with \$300,000,000 of deposits, are among the best managed in the world, the laws guarding and protecting the depositors so thoroughly that there is not the least danger; nor has there been the slightest rumor to cause uneasiness. But in spite of all this, and in face of the warning of the papers that a run on these savings banks was folly and would do great harm, there was a wild rush on nearly all of them last week. It fortunately caused no suspensions, but it has intensified the lack of confidence and uneasy feeling.

We call attention to these matters because the condition of affairs in the South today, and particularly in New Orleans, points out how, by a little common sense, all these troubles, these runs on banks, their failures, these closures of factories and the throwing out of work of large numbers of employes, can be avoided.

That the South has stood the strain better than the West has been remarked by a number of Eastern journals; and the explanation is easy enough, that it has been more economical and less speculative. It is today avoiding, simply by common sense and confidence, many troubles that even the East is suffering from.

Let us call attention to Louisiana and New Orleans, simply as samples of the South. There has been no failure here of any bank, national, State or private, and Louisiana is the only Southern State, except Virginia, that can say this. There has been no uneasiness, no run on any bank.

For the first six months of the year the failures in Louisiana were fifty-three, as compared with eighty-four in 1892, with liabilities only half as great as last year, and what is true of Louisiana is true of North Carolina, Florida, Alabama and Mississippi, whereas the failures in the New England States are in liabilities 100 per cent. greater in 1893 than in 1892, 220 per cent. in the Middle States, 240 in the West, 400 in the Northwest and 300 on the Pacific coast.

In the matter of the closing of factories we have been equally fortunate. The number of establishments open in the summer here has steadily increased from year to year, until now it is greater than it has ever been. There were formerly many idle persons here in summer, and it was generally regarded as a dull season and looked forward to anxiously by thousands. This is now over, and perhaps no city in the United States has relatively fewer persons out of employment today than

New Orleans. This idle population, without work, without money, and which will be soon crying for bread, has become the striking feature of the financial crisis in the North just now. Tens of thousands of Colorado miners, when the silver mines closed, poured into Denver, to find no work for them there; thence into Chicago, to discover thousands out of employment in the "Lake City," and New York, with 36,000 of its own laborers idle, expects to ultimately get the bulk of this eastward exodus of the unemployed.

As we have said, we have escaped all this. But one important industrial enterprise has closed here, and that was not in New Orleans, but opposite, a saw mill owned wholly in Chicago, the closing being due to a Chicago failure. The cotton mills have continued active, while those of Fall River and New Bedford had to "shut down." Our building trades have been unusually busy, increasing their business 65 per cent. during the year. Our foundries have never had so much work to do to supply the new machinery being called for by the sugar mills, this one item being estimated by Collector of Internal Revenue Carter at \$2,000,000.

It will be seen, therefore, that we have escaped bank and business failures, the closure of factories, a large unemployed population and other evils. It is true that conditions here have been very favorable, but our escape from these evils, which have occurred so generally everywhere, is due rather to common sense, an absence of wild speculation and a refusal to encourage or tolerate scares and panics. We have just begun harvesting our crops; they are all good and will bring us money. The rice will give us something to handle until the cotton comes in. The latter is always a cash crop, a product the most easily converted into money of any grown. The sugar crop will be the largest ever produced in Louisiana—for there has never been such splendid growing weather—and it will under all circumstances yield us a handsome profit. Hence it will be seen the future is very reassuring, and Louisiana, which has so far weathered the storm that has been prevailing without a single bank lost, can feel confident of going along "the even tenor of its way" undisturbed by the senseless scares and panics that have prevailed elsewhere until Congress meets and gives us some plan that will restore public confidence and get rid of the very peculiar crisis that has prevailed in this country for months—a crisis not founded on inflation or extravagance or any just cause, but altogether on lack of public confidence.

The Whole Country Is Pleased.

[From the New York Sun.]

The fact that the financial storm has been so light in the South while so heavy in the West is made a subject of comment by the MANUFACTURERS' RECORD, of Baltimore. There is no doubt that the bankers and financiers of the South are more conservative than those of the West, speaking broadly. It is also to be remembered that speculative activity has been less energetic in the South than in the West, that the silver-producing West has been more affected than the South by the diminished demand for silver, that manufacturing industries founded upon credit have been expanding more rapidly in the West than in the South, that the cotton crop of the South is more readily available at all times for the payment of balances than any product of the West, that the real estate transactions in the West far surpass those in the South, and that the amount of reserve capital in the hands of Southern people is proportionately greater than that in those of Western people. The whole country is pleased with the financial stability of the South as illustrated by the figures given in the MANUFACTURERS' RECORD.

The Trade of Jacksonville, Fla.

The collector of customs for the port of Jacksonville, Fla., has furnished the following report of the business of that port for July, as follows: The imports of the month consisted of 3171 barrels of flour, 2060 barrels of sugar, 20,442 packages of general merchandise, 39,856 bundles of orange-box shooks, 2032 tons of coal, ninety tons of guano, 100 tons of brimstone, 2810 barrels of oil, 450 cases of oil, 816 kegs of nails, 4400 barrels of fertilizers, 450 packages of groceries, 435 tons of gas lime, 160 bags of coffee, thirty bales of cattle hair, 350 cases of canned goods, 2120 bags of fertilizers, 325 bags of salt, 300 cases of gasoline, 1481 barrels of Portland cement, 450 tons of fertilizer, 31,325 pounds of tobacco stems, 10,000 bricks and 400 packages of powder. The exports for the month consisted of 10,312,000 feet of lumber, 27,460 bundles of shingles, 9900 packages of fruits and vegetables, 8800 packages of general merchandise, 13,000 cross-ties, 200 barrels of naval stores, 500 bales of hay, 889,000 shingles, 300 packages of tobacco and 400 tons of kaolin. The foreign imports for the month consisted of 6190 pounds of tobacco valued at \$4805.51, and a quantity of fruit valued at \$1813.50. The foreign exports for the month were 99,941 feet of timber valued at \$1663.09, and merchandise valued at \$14.50.

To Utilize the Power of the Swannanoa

W. R. Whitson, an attorney of Asheville, N. C., appeared before the board of aldermen of that city at their last meeting and stated that the United Industrial Co., of New York, with \$5,000,000 behind it, was desirous of constructing an 85-foot dam across the Swannanoa river. The location is about two miles above the city water works, and the intention is to secure power to run an immense knitting factory which will be erected at that point, providing the board of aldermen does not prevent the consummation of its plans. The board has replied that it is a matter for expert opinion, and it is not prepared to give an answer at present. The company has secured options on all the land around for the proposed mill-site, and if it is able to begin operations will erect homes at Asheville for its employes. If the city acts adversely to its interests it will probably go elsewhere.

Improvements at Sabine Pass.

United States Engineer J. B. Quinn returned to New Orleans on the 2d inst. from his trip of inspection to Sabine Pass. Major Quinn found the work progressing well, except that rough weather was delaying dredging across the bar into the 16-foot circle. At present there is a clear depth of twelve feet over the bar at the mouth. The intention is to increase it to sixteen feet, which could be done, Major Quinn thinks, with two weeks of steady work. Work on the jetties for the month of July is as follows: 451,588 tons of rock and 444,444 square yards of mattress placed in west jetty; jetty extended 400 feet. Dredging cut No. 1 extended 1470 feet and cut No. 2 extended 3150 feet. It is thought by the contractors that one week of favorable weather will see seventeen and a-half feet full on Sabine Pass bar.

Sales of Florida Real Estate.

Reports from the vicinity of St. Augustine, Fla., are that considerable real estate is changing hands, and that much outside capital is being invested in the locality. In North City there is much activity in real estate transactions in the neighborhood of the San Marco Hotel. A tract of twelve acres just north of the hotel has been divided up into lots which are being sold rapidly. Half a dozen cottages are being planned by purchasers of the land and will soon be in course of construction.

The South Still Solid.

[From the Atlanta Constitution.]

The Boston Herald remarks editorially that "the South appears to be standing the financial strain much better than the West." If we take into account the situation in New England as foreshadowed by dispatches, the comparison of our contemporary will bear enlarging. The truth of the matter is that the South is standing the financial strain much better than any other section of the country, although the other sections have been thought to be more highly favored.

The result is due to two causes. The first is that there has never been a supply of money here sufficiently large to warrant enterprise in taking an abnormal or a speculative shape. Although the industrial development of the South has been really wonderful, investment has never been tempted by a plethora of capital to venture into unknown or dangerous depths. A wide margin of safety has always existed between investments and their possible outcome.

The second cause runs parallel with this. The scarcity of money, the low price of cotton and the hard conditions that surround an agricultural population have compelled our people to practice the most rigid economy, and the necessity for this has been of such long standing that economy has become a fixed habit; so that, as we remarked yesterday, the very conditions that have caused the greatest complaint have become a source of safety. The South has no speculative projects to go into sudden liquidation, pulling down in their fall more substantial interests—no over-capitalized trusts or combinations to respond to the violent contraction in prices and values that is going on.

The farmers of Georgia—and we may say of the whole South—are in a better condition today than they have been since the war. That is the testimony of all who have investigated the matter. We have it from the representative farmers themselves. They made good crops last year; they have corn in their cribs and meat in their smoke-houses, and they have the promise of good crops ahead of them. They have been economizing in all directions; they have been learning to live at home, and the financial stringency that is seriously affecting the people of other sections has no effect on them.

"Hard times at the North?" said an old farmer the other day. "Well, them that give will have to learn how to take, I reckon. I've been havin' hard times at my house ever since the war, inabout." An illustration is always better than a dry argument. The same farmer told with a chuckle of a little trade he had just made. He had an old sow which, after producing several profitable litters of pigs, fell into the habit of eating chickens. So she was fattened and killed and put through the process that sweetens home-made meat. The old farmer brought one of her sides to town—"middlin'," he called it—sold it for a barrel of flour and had forty cents to boot. He said he could turn that old sow into enough flour to enable him to have biscuit every day in the year.

Naturally, there are no hard times at this farmer's house, for he lives within his means and has a little money over, and "the old woman," as he calls her, has nearly three hundred young chickens running loose in the barley stubble. Now, it stands to reason that a financial stringency which breaks banks in the West and closes mills in the East can have little effect on this man. He has as much ready money now as he has had during the past twenty years, and not so much use for it. He is raising his own supplies, and if cotton goes down below the profit point he can afford to hold it.

Now, the condition of this farmer rep-

resents that of the great majority of farmers in the South, and, with such modifications as will suggest themselves to the intelligent reader, it represents the business situation here, where there are no bubbles to collapse and no speculative ventures to go to pieces. The business of the South is all on a legitimate basis, and it is in fine shape to face the contingency which has been forced upon it by the contraction necessary to place our financial system on a gold basis.

Patriotism, patience and courage have made the South solid politically, and wisdom, prudence and economy have made it solid financially.

Missouri Lead and Zinc Trade.

The tendency of the ore markets in the zinc and lead districts of Missouri is toward a lower range of values. At Joplin and other points in the district there was another slump in prices last week. The average for jack was only \$17.00 per ton, and the demand for ore was light, even at that price. Lead ore declined to \$15.76 per thousand, and the probabilities are that the Picher Company will be forced to cut the price to \$15.50. There is no demand for pig lead, and it goes begging at three cents and lower. The Picher Company has nearly \$75,000 worth of the commodity on hand. The demand for white lead is brisk, and the entire output of the works is easily disposed of. There is no improvement in the spelter markets, and there is not likely to be until business grows brisker. Last week's ore sales are as follows:

Mines.	Zinc, lbs.	Lead, lbs.
Joplin.....	376,280	245,140
Cartersville.....	1,083,030	93,010
Galena.....	516,000	39,000
Webb City.....	92,970	17,370
Oronogo.....		21,750
Zincite.....	13,690	4,489
Total.....	3,081,970	419,759

Total value of district sales \$32,763.81.

Naval Stores Trade at Savannah.

The naval store market at Savannah, Ga., which was being bulled to a great extent several weeks ago, has had a relapse. In high-grade rosins the decline in prices has been very marked. The artificial movement was started up by a firm of buyers who sold through the London brokers, but, like similar deals, was only artificial. There has been a great falling off in the home demand, and the stock on hand now is nearly double that of a year ago. The following comparative statistics show the state of the general market: Domestic shipments of rosins from April 1, 1892, to August 1, 1892, were 141,617 barrels, and for 1893 they amounted to 76,376 barrels, or a decrease of 65,241 barrels in the domestic consumption for the same period last year. Foreign shipments April 1 to August 1, 1892, are 162,619 barrels; 1893 were 257,556 barrels. Stock on hand this year, August 1st, was 143,155 barrels; 1892, 66,528 barrels, or an excess this year over last of 76,627 barrels. Spirits of turpentine has shared the same fate as rosins, and the domestic consumption this season has been 9878 barrels less than for the same period last year, while there has been a slight decrease in the foreign shipments.

Another Elevator for New Orleans.

The Yazoo & Mississippi Valley Railroad Co. has applied for a permit to erect a \$54,000 elevator in New Orleans. The site selected is on Howard street, bounded by Perdido, Freret and Poydras streets. The plans and specifications for the elevator have been submitted to the building inspector. The contract for the work has been given to the firm of James Stewart & Co., who built the two elevators at South-

Valuable Experiments in Fruit-Growing.

A bulletin of unusual interest to Southern fruit-growers has recently been issued by the Experiment Station of the Agricultural and Mechanical College at Auburn, Ala. The valuable work done by this station has frequently been mentioned in the MANUFACTURERS' RECORD, and the experiments recorded in this bulletin deserve especial attention in view of the interest being displayed in fruit-raising in the South. The results are a summary of eight years' work, and, therefore, represent what may be expected in actual practice on a well-managed farm.

In 1886 a vineyard with northern exposure was planted in forty-eight varieties of grapes, and in the spring of 1892 all excepting the Concord, Delaware, Ives and Perkins varieties were dead. In July, 1893, examination of these remaining varieties showed that the Delaware and Ives were the most hardy and reliable, while the Concord and Perkins were reasonably so. The four make an excellent succession, the Perkins ripening early in July, then the Delaware and Concord and finally the Ives, which holds on until the Memory grape comes in. In another vineyard with southern exposure, planted in 1889, these same vines, and also the Martha, Norton's Virginia, Empire State, Warren and Cynthiana, have thriven well. The Green Mountain, Northern Muscat and Moore's Diamond are also doing nicely. Eight varieties of the Muscadine type were planted in 1886, all of which did well. By planting the ordinary Scuppernon, the Memory, Mish and Flowers it is possible to have a constant supply of grapes until frost.

Of forty-five varieties of apples planted in the spring of 1886 only the following seventeen have given satisfaction. The best summer varieties are the Red June, which ripens about June 15; the Astrakan Red, ripening about the same time; Early Harvest, ripe about June 25; Carolina Watson, a remarkably fine apple, ripe about July 1, and the Horse, a vigorous tree, ripening about July 25. The fall varieties are the Elgin Pippin, ripe about August 10; Simmons's Red, ripe August 20 and continuing into September; Carter's Blue, ripe September 10; Kittayeskee, ripe September 25; Tuscaloosa Seedling, ripe about the same time, and the Romanite and Horn, ripe October 1. The winter varieties are Hewes's Virginia, Limber Twig, Stevenson's Winter, Ben Davis or New York Pippin and Wine Sap, all ripening during October.

Of pears, forty varieties were planted in 1885, and all have succumbed to the blight, excepting Keiffer, Garber's Hybrid, Duchesse d'Angouleme, Mt. Vernon and Winter Nelis. Every possible means for removing the blight was tried without success.

In 1885 an orchard of thirty-seven varieties of budded peach trees, two of each kind, and fifty seedlings were planted. Nearly all of these are in healthy condition and bearing an abundant crop of fruit. The varieties, in the order of their ripening, are the Alexander, ripe May 25 to June 10; Hale's Early, ripe June 20 to July 1; Early Tillotson, ripe June 25 to July 10; Amelia, ripe July 5 to 15; Crawford's Early, ripe July 15 to 25; Crawford's Late, ripe about two weeks later; Stump the World, ripe July 15 to 30; Thurber, ripe about the same time; Elberta, ripe July 20 to August 5; Duggars' Golden, ripe July 25; General Lee, Stonewall Jackson, ripe July 25 to August 10; Eaton's Golden, ripe August 20 to September 1; Denning's September, ripe August 25 to September 10; Stinson's October, ripe September 10 to October 1, and Hudson's November, ripe October 20 to November 1.

In 1885 a number of varieties of plums

were planted, but the only ones which have given good returns are the Weaver, Southern Golden, Hattie and Wild Goose. A number of varieties of the Japan type are now being grown and thus far have given excellent results. These are the Botan, Botankio, Chabot, Maru and Ogon.

Five varieties of quinces were tried, but only the Champion and Chinese or Quince-donia have ever borne any fruit. Eight varieties of cherries all proved failures. Of six varieties of mulberries only the Hicks and Claude have been satisfactory. Pecans, English and black walnut trees have been planted and are growing finely.

Of sixteen varieties of raspberries tried, the Turner and Cuthbert have given the finest results, both from the length of their fruiting season and the excellence of the fruit. Among the many varieties of strawberries tried, the following have given the best results in the order named: Sharpless, Wilson, Belmont, Bubach, Eureka and Haverland.

Experiments with melons and cantaloupes have shown that of the former the Cuba, Sugar Loaf, Jones, Pride of Georgia, Cuban Queen and Jordan's Gray Monarch are the most satisfactory, while the Kolb Gem is best for shipping. Of the cantaloupes thirty varieties were tested, and the Improved Pineapple, Nutmeg, Netted Gem, extra early Hackensack, Baltimore or Acme, Atlantic City and Nixon proved most reliable.

To Direct Western Trade to the Gulf.

Governor Hogg, of Texas, received a letter on the 4th inst. from Governor Lewelling, of Kansas, asking him to join in securing a steamship line from the Gulf of Mexico to ports of Europe for the purpose of facilitating and cheapening the exports of Western products. He requests that Governor Hogg appoint a delegation to join a similar one to be appointed by himself to go to Chicago on the 15th inst. and confer with and interest the representative of European government at the World's Fair in the undertaking.

Bridging the Arkansas River.

The Arkansas courts have just handed down a decision sustaining the action of the Pulaski county court, which decided in favor of building another bridge across the Arkansas river, at Little Rock, at a session held several months ago. Further proceedings were restrained by a suit in the Chancery Court, which finally upheld the county court. This removes all obstacles and bids for constructing the bridge will be solicited. It will be one of the finest bridges in the South and the estimated cost is \$300,000.

Important Industrial Enterprise at Glyndon, Md.

The milling interests of William H. Baldwin, Jr., & Co., of Howard county, Md., have lately been reorganized, and besides the manufacture of cotton goods the company will establish a grain mill on a large scale. The capital stock of the new company is \$500,000, which will be divided into 5000 shares of \$100 each. The incorporators are William H. Baldwin, Jr., Frank G. Baldwin, Robert Morang, Carroll Baldwin, Summerfield Baldwin, Andrew D. Jones and David L. Mulsby, of Baltimore, and James D. R. Baldwin and Columbus R. Baldwin, of New York. The Baldwin property at Savage has for several years past, next to the cotton-mill industry of the Messrs. Gary at Alberton, paid the largest tax in Howard county.

THE Erwin Cotton Mills at Durham, N. C., have begun operations and made the first shipment of goods last week. The buyers were W. Duke, Sons & Co., the tobaccoists. The cloth will be used for tobacco sacks.

PHOSPHATES.

July Phosphate Shipments from Punta Gorda.

Phosphate shipments from the sub-port of Punta Gorda have been very active during the month of July. The total shipments as reported by Mr. K. B. Harvey, deputy collector, aggregated 11,152 tons, of which 7862 were foreign and 3300 tons were domestic. For the corresponding month in 1892 the total clearances of pebble phosphate for the month of July aggregated 5652 tons, of which 3750 were foreign and 1902 tons were domestic. The business at this port for the month of July in phosphate is the largest for any one month in the history of the industry, and the shipments to domestic ports for the current year to August 1 aggregate 13,500 tons, against 12,202 tons in 1892. Foreign shipments during the year 1893 have been largely in excess of last year, being nearly three times as large. For the current year to the 1st of August 32,164 tons of pebble have been shipped to foreign ports, against 11,677 tons for the corresponding period last year. The following table represents shipments for July:

Date, 1893.	Shipper.	Destination.	Vessel.	Tons.
July 1.....	Comer, Hull & Co.....	Plymouth, England...	Stmp. Robinia.....	2,550
" 8.....	Comer, Hull & Co.....	Fleetwood, England...	Stmp. Ardenrigh.....	1,512
" 10.....	Peace River Phosphate Co....	Pensacola, Fla.....	Schr. Garretson.....	900
" 17.....	Comer, Hull & Co.....	Baltimore, Md.....	Bark Tillie Baker.....	960
" 18.....	Peace River Phosphate Co....	Cuxhaven, Germany...	Stmp. Wandle.....	2,000
" 20.....	Gulf Phosphate Co.....	Baltimore, Md.....	Bark Onaway.....	1,300
" 20.....	Peace River Phosphate Co....	Pensacola, Fla.....	Schr. Lizzie Eels.....	140
" 31.....	Peace River Phosphate Co....	Göthenburg, Sweden...	Stmp. Sir Wm. Armstrong.	1,500
Total (7862 tons foreign, 3300 tons domestic).....				11,162

Fertilizer Analyses in Maryland.

For the benefit of the farmers of the State of Maryland, the Maryland Agricultural Experiment Station has just issued special bulletin K, being a treatise on "Compositions of Commercial Fertilizers Sold in the State." The contents of the work at this juncture will prove invaluable to farmers, and as the season is approaching when the seeding of cereals will commence, a careful study of the bulletin will give a clear idea of the fertilizer from which the best results will be obtained. Tables of the analysis and valuation of the different fertilizers made in the State are given in detail. The values fixed for the current year in Maryland of fertilizer ingredients are also given. The bulletin says: "The rates are fixed as a standard for computing or estimating the comparative value of the different fertilizers inspected, sampled, analyzed and reported upon. They are not intended to represent the proper selling price of the fertilizers at the place of sale or of use. They do not pretend to perfect accuracy, but if they err as to any one fertilizer the same error applies in like proportion to every similar one in the list. These rates represent very closely the wholesale prices at which a pound of nitrogen, potash and phosphoric acid can now be purchased in their various forms for cash in our large markets, plus 20 to 30 per cent." Commercial fertilizers are analyzed for farmers free of charge when sampled and sent as required by law. Suitable blanks will be furnished free by addressing Chemical Department, Agricultural College, College Park, Md.

Phosphate Markets.

OFFICE MANUFACTURERS' RECORD,
BALTIMORE, August 10.

There is no change to note in the phosphate market, and the same quiet tone has characterized the business of the past week. Advices are favorable from all points of production in Florida and South Carolina, and the work of development is going steadily forward. Latest reports from Europe are not much better, and the markets everywhere are quiet, with prices steady and the demand a shade better. The quo-

tations in the local market are unchanged. We quote Charleston, S. C., rock at \$4.50 to \$4.75 f. o. b. Florida 60 per cent. river pebble is offered at \$4.00 f. o. b., Tampa and Charlotte Harbor land pebble \$4.75 to \$5.50 for 65 and 70 per cent., price rising with guarantee. The schooner Emma C. Middleton arrived during the week from Charleston, S. C., with 650 tons of phosphate rock. The only charter reported is the schooner Blanche Hopkins, taken to load Ashley river to Baltimore on private terms.

FERTILIZER INGREDIENTS.

The general market is not materially changed and business is of a light volume, with very little snap or vigor to trade. Ammoniates are in fair demand at last quotations. The fishing season is very poor, and the absence of a good supply from this source will affect prices materially later on. We quote blood at 1.80 f. o. b.; tankage, 7 per cent. ammonia and 30 per cent. bone, is quoted \$22.00 to \$23.00, and 9 per cent. ammonia and 20 per cent. bone 2.20 and 10; fish 2.15; kainit \$11.50 to \$12.00 per ton of 2000 pounds in bags; nitrate of soda is easy, with receipts at the ports quite liberal and demand light at one and five-eighths to one and seven-eighths.

Domestic ports 102,239 tons of rock; foreign ports 175 tons, and ground rock shipped to domestic ports 3641 tons. The shipments for 1891-92 were 113,519 tons to domestic ports and 2692 tons to foreign ports, and railroads 35,600 tons. The shipments of ground rock for the same period were 4998 tons.

FERTILIZER INGREDIENTS.

The general market is quiet in tone, with no urgent demand for ammoniates. Manufacturers are not purchasing in large quantities, and the probability is that under the present financial muddle business will continue dull. Values continue easy for blood, fish and tankage; nitrate of soda is lower at two and a-quarter to two and three-eighths; kainit \$12.00 to \$12.50 per ton of 2000 pounds; brimstone to arrive is quoted at \$20.00 for best unmixed seconds.

Port Tampa Phosphate News.

July 26—Sailed.—Schooner Rob Roy, with 1127½ tons of pebble phosphate from the Pharr Phosphate Co., for Wilmington, Del.

August 1—Arrived.—American bark Martha Tucker and British steamship Serapis.

August 5—Arrived.—British steamships Aros and Leconfield.

August 6—Sailed.—Bark Martha Tucker, for Cartaret, N. J., with a cargo of 857 tons of pebble phosphate from the Bone Valley Phosphate Co.

The Cummer Phosphate Drier.

The introduction of modern labor-saving methods and machinery in mining and

them until an unsought-for demand brought them into the market, so that when this machinery was first offered for sale it had the benefit of several years of hard use with no other purpose in view than to fulfill the requirements of its builder's own work. These driers as now sold are built in four different styles, and five sizes of each style are made.

Style A passes the products of combustion through the material, but the combustion is so complete that the material being dried is not discolored.

Style B is a more expensive machine than style A, and is used with such materials as would be injured by being brought in contact with the products of combustion. In this style of drier air heated by direct heat or steam is passed through the material being dried. The drier is fired, when direct heat is used, the same as style A, with any desired fuel, and the machine heats its own air with a very simple and a very durable apparatus.

Style C is what is styled a "muffled" drier. With some materials it is desirable to utilize the escaping vapors or gases; in this case it is important that as little air as possible should be mingled with the vapors, and for other reasons it is often necessary that neither air, moist vapor nor the products of combustion should be brought in contact with the material being dried.

Style D is a drier combined with a furnace. This combined machine will not only dry almost any material, but in addition will deliver the material heated to almost any desired temperature, easily up to 1000° and even as high as 1500° in a continuous straightforward manner. This

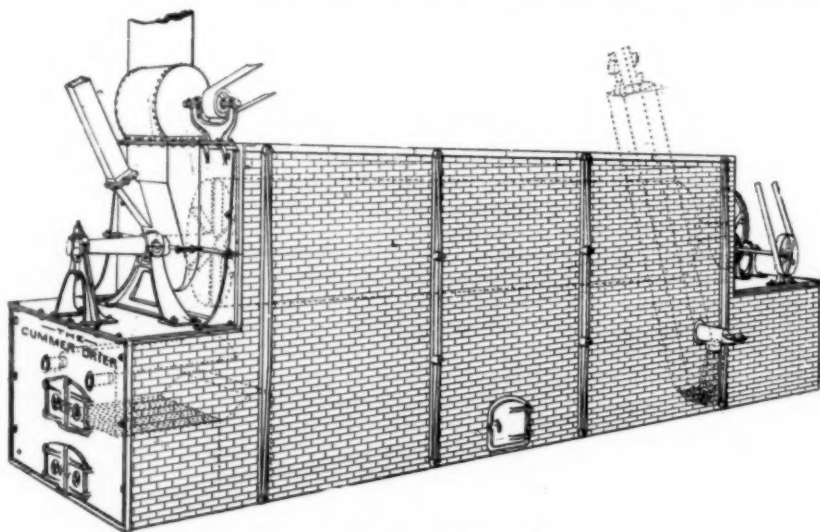


FIG. 1.—THE CUMMER PHOSPHATE DRIER.

CHARLESTON, S. C., August 8.

In the general phosphate market there is a little more life and a better demand from domestic ports. Advices from the mining sections of the State report the output fully ample for any urgent demand from local or foreign ports. Prices are easy and holders are willing sellers at quoted figures. The shipments of rock for the week were distributed as follows: Per schooner J. H. Parker 725 tons and by steamer 100 tons ground rock, both for New York; for Baltimore the schooners May S. Bradshaw took 510 tons and the Emma C. Middleton 750 tons; the schooner George R. Congdon took 612 tons to Barren island and schooner Anna E. Ketcham 530 tons, making a total of 3227 tons. Phosphate freights are unchanged, and there is a scarcity of handy-sized tonnage at the moment, with rates firm. The market closed steady, with prices as follows: Crude rock \$3.75 to \$4.00 f. o. b.; hot-air dried \$4.75 to \$5.00 f. o. b., and ground rock \$7.50 to \$7.75 f. o. b. in bags. The comparative exports of crude phosphate from the port of Charleston from September 1, 1892, to August 4, 1893, are as follows:

preparing phosphate rock and pebble has necessitated the abandonment of the old practice of drying the rock by burning in open piles for more economical methods. Rotary cylindrical driers represent the usual substitute for the crude kilns, and, although of numerous patterns, these rotary driers may be classed in two divisions—exposed cylinders, internally fired, and enclosed cylinders, fired either internally or externally, or in both ways. The Cummer drier, manufactured by the F. D. Cummer & Son Co., of Cleveland, Ohio, represents the most successful and most widely-used type of enclosed drier, and driers of this make have met with great favor among the phosphate miners of South Carolina and Florida. Although the first cost of a Cummer drier is much in excess of the cost of an ordinary unenclosed cylinder, experience has demonstrated that the higher cost is justified by considerations of capacity, durability and small expense for repairs.

The origin of the Cummer drier may be considered as an accident, having been designed by Mr. F. D. Cummer for the use of his own firm without thought of selling

machine will drive off 10 per cent. of moisture from ten tons of material per hour, and in addition will heat the material up to the temperatures named, and by the use of calcining bins, into which the material may be deposited after being heated, the material may be immersed in or subject to this high degree of heat for many hours by simply carrying its own heat with it into the chambers above referred to.

Rock or pebble phosphate is dried by the Cummer drier very rapidly, cheaply and evenly without overheating. The rock can be heated to 200° F. to 800°, so that it will all be thoroughly calcined if required.

Where scarcity of water or any other cause renders it undesirable to wash the phosphate, the material can be handled without washing, being separated, cleaned and dried by the Cummer dry process.

An important adjunct of the Cummer drier is the separating machinery for the separation of fine pulverized dry materials, to say eighty mesh and finer, such as ground phosphate rock, clay, Portland cement, water lime, ground, unslacked white lime, etc. With less than one horsepower ten tons or more per hour can be

separated with this apparatus, and the cost of repairs, as well as the power required, is claimed to be one-tenth of that required by reels or screens as usually used. These separators, of the type shown in Fig. 2, are made of several different sizes and styles, the largest of which will handle thirty tons per hour and separate the finer material, thirty to forty mesh and finer if

Phosphate Co. The Kappa has finished loading with 800 tons from the French Company's mines. There are six others on the way, and the prospects are very encouraging for heavy shipments during the next six weeks.

MR. TUCKER has returned to Bartow, Fla., and will assume the management of the Bartow Phosphate Co.'s plant.

eral elevation being about 300 feet above New river and 2200 feet above the sea. Geologically the tract is wholly underlaid with the Lower Magnesian limestone No. II. The limestone rests on the Potsdam slates, and is everywhere covered with a varying thickness of heavy red and brown clay.

Mining operations are all upon the out-

the limestone has been forty feet between chimneys. Normal to the sides of the chimneys a thickness of from five to ten feet occurs frequently, but the average thickness is less than five feet.

The ore bodies consist of hard and soft ore, and are won simply with pick and shovel. The hard ore occurs throughout the mass of the ore body in all sizes, from small grains up to masses of several tons weight. Occasionally block-holing and powder are resorted to, but usually sledgeing and wedging answer. The boulders often have a concretionary structure like "pot ore," with beautiful incrustations and crystallizations of zinc in vugs. An irregular, shelly or honeycomb structure is common, with cavities and cells filled with gray, yellow and brown powdery zinc ore. When the formation is not compact, and small cavities occur in it, the ore facing them is covered with minute, brilliant zinc crystals, often drusy in appearance. Slab ore is common where cavities are larger. Rarely the hard zinc ore clings to the limestone in sheet form, and is worn by gadding.

The ore body is entirely distinct between the overlying clay and underlying limestone. The material in which the ore is found is of a clay-like nature, and contains grains and pebbles of ore. This is washed and jigged. Both open and underground workings are employed. Most of the work has been by the former method, but of late the latter has been found advantageous in many cases.

Another Office Building at Galveston, Texas.

The Galveston Chamber of Commerce will add an office building to the number of fine structures already erected in that city. C. H. McMaster has been selected chairman of a committee to make arrangements for its construction. The building is to be eight stories high and is to have all the essentials of a modern office building, with elevators, heat and light plants, etc. The ground floor will probably be used for a bank and is to be provided with the necessary storage vaults, etc. This building will be the first of its kind in Galveston.

The Trade of Fernandina, Fla.

Twenty vessels entered Fernandina, Fla., coastwise during the month of July—

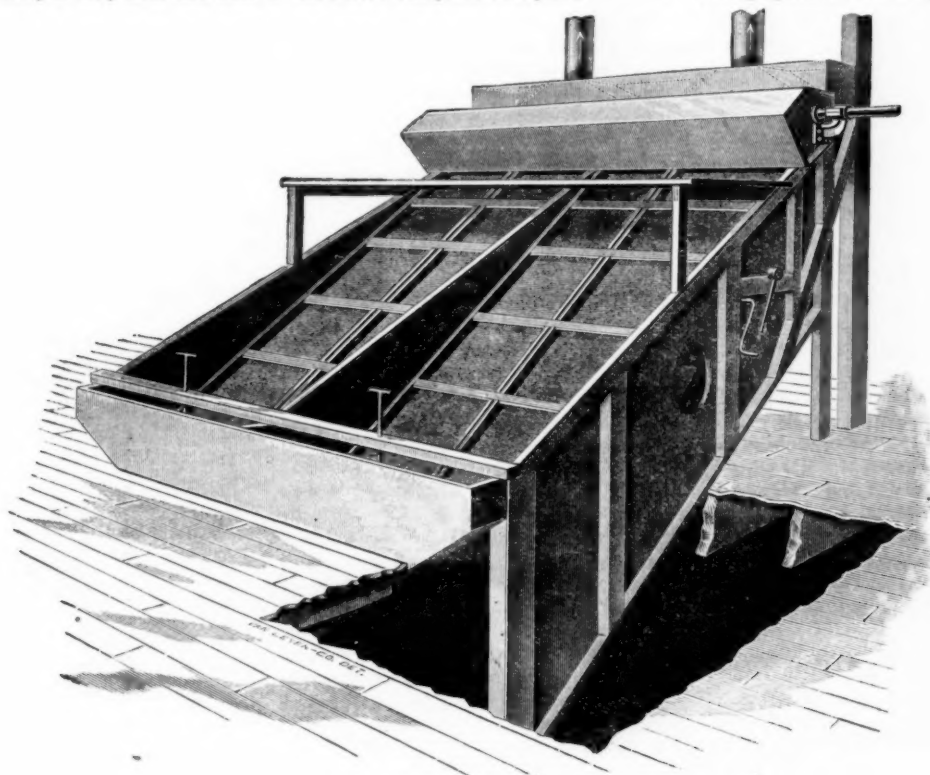


FIG. 2.—THE CUMMER SEPARATOR.

desired, from the coarse material. This machine, when modified, will separate fine cement, dry slacked or pulverized unslacked lime, kaolin, ground phosphate rock and similar fine materials to eighty mesh and finer very rapidly. This same machine, by another modification in construction, will remove nothing but the finest "floats." Messrs. Cummer & Son also make a separator of iron which is so constructed as to make fine separations with very hot materials without wasting any of the heat.

Fig. 3 represents the Cummer scourer, cooler and separator. After hot material comes from the drier it is often desirable to have it cooled before the succeeding manipulations of the material are continued. It is also desirable sometimes to not only cool the material, but to scour and to separate from it any dust that it may contain. And with certain materials which have been thoroughly dried and have passed through one or more reductions, they become again too moist for further successful reduction through reabsorption of moisture from the air. In this case the machine is used as a drier. It does the work and gives no trouble. It is a most excellent machine when used for scouring, cooling or purifying.

Phosphate and Fertilizer Notes.

THE estimated shipments of phosphate from the port of Fernandina, Fla., during the current month are 11,000 tons. Seven phosphate vessels are chartered for cargoes during the month, three each by the French Company and Anglo-Continental Guano Works and one by the Dunnellon Company.

THE phosphate shipments from Fernandina, Fla., are improving, and the delayed steamers are arriving. The steamer Ruabon cleared on the 2d inst. with 2000 tons phosphate shipped by the French Company. The Sledmere cleared on the 4th inst., being loaded by the Dunnellon

The Bertha Zinc Mines.

At the engineering congress held in Chicago W. H. Case presented an interesting paper describing the Bertha zinc mines in southwest Virginia. These mines are in the southeast part of Wythe county, and are the oldest zinc mines in Virginia. The only other mines in that section are those of Manning & Squier, northeast of Bertha, and the Wythe Lead & Zinc Co. at Austinville, eight miles southwest. Near Ivanhoe another company is making

crop of strata of zinc-bearing limestone which dips between six and seven degrees toward the river. The zinc ores thus far mined have been the silicate and carbonate of zinc (calamine and Smithsonite), the larger proportion being silicate. Their occurrence in segregated bodies and freedom from lead and iron are unique. The outcropping limestone has weathered very irregularly, so that when the overlying clay and ore is removed there is presented a wilderness of limestone pinnacles, cones, columns and domes of varying heights,

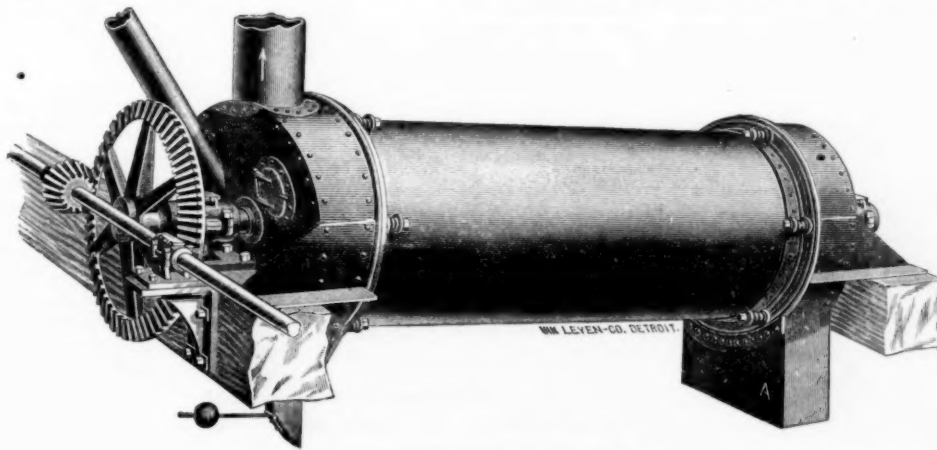


FIG. 3.—THE CUMMER SCOURER AND COOLER.

preparations to mine. All of these properties are included in a distance of ten miles along a direct line bearing north 55° east on the south side of New river. The greatest distance of any of the mine openings from the river is a little less than two miles.

The mining property of the Bertha Zinc & Mineral Co. comprises 742 acres in fee, the largest portion of which is considered to be zinc-ore-bearing. Topographically the tract is an elevated plateau, with a rolling surface and rounded hills, its gen-

locally called chimneys, some of which have an altitude of nearly 100 feet above the cavities at their base. The zinc ores are found invariably resting against the sides of these chimneys and in the trough-like cavities at their base. At times they cover also the upper surface of the limestone, sometimes entirely enveloping the chimneys, particularly the lower ones, but more often only covering them partially. The ore varies in thickness from a few inches to many feet. The greatest observed thickness normal to the surface of

eight steamers and twelve sail. There were cleared during the same period four steamships and twelve sailing vessels with the following cargoes: 3,822,047 feet of lumber, 124,550 shingles and 8000 crossties. The foreign entries during the past month were one steamship and four sailing vessels, all in ballast. There were cleared for foreign ports during the same period three steamers and six sailing vessels with the following cargoes: 61,900 shingles, 1,070,206 feet of lumber and 7579 tons of phosphate, the value of which amounted to \$93,846.98

COTTONSEED OIL.

This department is open for the full and free discussion of trade topics and practical questions, and contributions are invited from men who are identified with this industry. Items of news are always acceptable.

Cottonseed Oil as a Source of Rubber.

By C. B. Warrand.

Products from drying vegetable oils having been employed for many years as substitutes for rubber or caoutchouc, a description of their employment in the past will probably be of some interest to your readers, as it strongly indicates the adaptability of cottonseed oil as one of the very best substitutes for rubber if rubber obtained from same is not an actual artificial rubber.

If linseed oil, for instance, be brought to a thick glue-like consistency by boiling for at least twenty-four hours and dilute nitric acid be added and the boiling be continued for several hours longer, the linseed oil will be changed to a plastic mass, which will become hard upon exposure to the air. On dipping this mass in hot water it regains its softness, and on cooling it hardens again. This product is the caoutchouc or rubber of drying vegetable oils, which can be produced from any vegetable drying oil, but less economically than from linseed oil.

Nitric acid is one of the best oxidizing agents, and the production of this oil caoutchouc is evidently a result of the oxidation of the linseed oil. Just in the same way cottonseed oil can be oxidized and will form a rubber or caoutchouc, although different means have to be used for the effective oxidation of cottonseed oil, as it is not strictly a drying oil, but it is an intermediate between drying and non-drying oils.

This oil caoutchouc is of considerable commercial importance, as it forms the basis of a great number of industrial products. If linseed caoutchouc is mixed with litharge, it is excellently adapted to the manufacture of bougies, catheters, flexible sounds and many other surgical instruments, and it has been used for this purpose for many years.

This oil caoutchouc can also be readily vulcanized by chloride of sulphur dissolved in benzine or carbon disulphide, with or without the admixture of magnesia, lime or baryta, or various lead, copper, zinc or antimony oxides. It is also largely used in the manufacture of linoleum or oilcloth; it also makes a very good waterproof material, if a small quantity of natural rubber is added. Linseed oil consists of a mixture of linolein, the glyceride of linoleic acid; about 80 per cent. of the same consists of olein, palmitin and myristin.

The well-known quality of linseed oil as a varnish is increased by boiling with such mineral substances as are capable of yielding a portion of their oxygen to the oil, thus causing a partial oxidation of the oil. For this purpose plumbic oxide (litharge), red lead and anhydrous linoleic acid of magnesia are employed; the last two are used conjointly, and to these oxidizing agents have been added lead oxides, plumbic acetate, zinc sulphate, etc.

By boiling not only does a partial oxidation take place, but by increasing the temperature to between 600° and 700° the mucilage and other impurities of the oil are driven off as a yellow froth, or they are removed by partial destructive distillation.

The partial oxidation which occurs by thus boiling linseed oil is finished when thin coats of this varnish are exposed to the air and sunlight, forming a complete coat of oil caoutchouc, hence the unsurpassed value of linseed oil as the basis of the best known varnishes.

Cottonseed oil consists of 30 to 34 per cent. of palmitin and 66 to 70 per cent. of olein, hence it is quite probable

that it can be used the same as linseed oil, as in both the predominant part is olein. That it has to be treated differently from linseed oil to obtain the same results is also likely. The palmitin commences to harden at 55° Fahrenheit and is completely congealed at 32°, while the oil or olein does not congeal above 28°; hence it is an easy matter to separate the palmitin, which is, however, better known as the stearine of commerce, by simply reducing the temperature of the crude oil to 32° Fahrenheit and expressing the oil in a filter press. This stearine is largely used in the manufacture of refined lard, and while a pound of crude oil is now worth about five cents the crude stearine is worth some eight or nine cents per pound.

After separating the palmitin the oil has to be refined and bleached before it can be used for culinary purposes or for the manufacture of numberless artificial butter products, called butterine, oleomargarine, etc. This is usually accomplished by the use of carbonate or caustic alkalies and sulphuric acid. Such a treatment of the oil, however, seems to cause some change in the oil which renders it incapable of further oxidation. By long exposure to the air and sunlight this refined oil does not thicken and oxidize, but it becomes rancid and acid; thence experiments to produce rubber from refined oil of commerce will always fail, while it is comparatively an easy matter to oxidize crude cottonseed oil deprived of its stearine.

Some five or six years ago an English inventor sold to an American rubber manufacturer for a considerable amount a secret process for manufacturing cottonseed oil into rubber. Since then this secret has become the property of the rubber trust. This process has been used ever since, and it is a matter of fact that large quantities of cottonseed oil are now being used by at least fifteen or sixteen rubber factories in the United States to produce a substitute for rubber. This is in the United States alone. I do not know to what extent this process is being used in England and on the Continent, but as it originated in England it is probably used to some extent there also.

By this process the converted cottonseed oil costs about seven cents per pound. The admixture of this substitute has been limited to about 15 per cent., as it is not deemed advisable to exceed this amount without deteriorating the quality of the rubber product.

The specific gravity of crude cottonseed oil is 0.93; if the palmitin is removed the gravity of the remaining oil is lowered to 0.921. By boiling the oil for some time the impurities are removed and the specific gravity is lowered a little more, but by my experiments the specific gravity increases as the oxidation of the oil proceeds. What I considered perfectly oxidized oil or finished rubber has a gravity of 0.925, which is identically the same as that of pure rubber.

There is no known way to ascertain the quantity of pure rubber employed in finished products by the way of a chemical analysis. The only known way to approximate the purity of finished rubber products is by the specific gravity of the same. Hence a substitute which has the same specific gravity, the same elasticity, the same faculty to vulcanize, is a very valuable substitute, if it is not of identically the same chemical composition.

Rubber is composed of nine atoms of carbon and seven of hydrogen. It is, however, quite probable that there is a more complex mixture of various hydrocarbons, which have so far not been ascertained.

The composition of olein is eighteen atoms of carbon, thirty-four atoms of hydrogen and two atoms of oxygen. This formula divided by two would give nine atoms of carbon, the same as rubber, seventeen atoms of hydrogen and one atom of

oxygen. Assuming that ten atoms of hydrogen were combined with the atom of oxygen, and other oxygen from some other source—from the atmospheric air, for instance, by heat, sunlight or electricity, or from some oxidizing agent like ozone—the result would be chemically pure rubber and water, which would evaporate. I believe that in several of my experiments this actually took place, and that the result was actually chemically pure rubber from cottonseed oil. An expert who is familiar with the product from cottonseed-oil rubber produced in the vicinity of New York examined my samples and thought the same by far the best.

Cottonseed Oil in Holland.

ROTTERDAM, July 22.

Editor Manufacturers' Record:

Business has been somewhat more active during the past week. At last some owners of oil have accepted the prices offered by the butterine manufacturers, and a few thousand barrels have been sold at a base of thirty-six to thirty-seven guilders per 100 kilos for choice butter oil. The price of thirty-six Dutch guilders per 100 kilos remains obtainable for good qualities, but many owners refuse this price and hold their oil or are storing in warehouse the parcels which they receive from America and from other countries. The arrivals continue important. Yesterday the steamer Obdam arrived from New York with more than 1300 barrels, and America reports that further quantities are on the way; so we are getting very well supplied with oil.

As stated many times before, the butter-makers here are inclined to pay thirty-six guilders for choice oil, and this value will probably continue obtainable during the coming months. If there are still owners of oil of good quality in America who wish to sell at this figure, they can be sure that by consigning to our port they will obtain this figure for their goods. However, I cannot see a reason why we should see higher prices in Holland; the prices are already high. Probably the market in Holland will remain steady at a price of thirty-six guilders. It will be very difficult, however, to obtain higher prices, because the season is advanced and stocks are large.

G. W. SANCHES.

Cottonseed-Oil Notes.

THE contract for the oil-mill buildings at Lockhart, Texas, has been let to Messrs. Northcroft & Neib, and they will soon have the houses ready for operations. A large force is at work on the Aransas Pass Railway changing its sidetracks to a point nearer the mill for the convenient loading of cars.

MR. CHARLES H. FISHER, of Columbia, S. C., has been elected president of the Edgefield Cotton Oil Co., and will conduct the affairs of the newly-organized company.

THE cottonseed-oil mill at Navasota, Texas, has undergone a thorough overhauling and many improvements in machinery have been introduced. The mill started up on the 3d inst. to crush a week's run of cottonseed and everything worked smoothly.

THE market at New Orleans for all products of cottonseed is beginning to show some activity as the new crop of cotton is beginning to arrive. Goods in receivers' hands are firmly held and quotations are firm as follows: Cottonseed, \$12.00 per ton of 2000 pounds delivered; cottonseed meal at depot, \$22.00 to \$22.50 per short ton, and for export, \$24.00 to \$24.50 f. o. b. for short ton; oilcake for export, \$24.00 to \$24.50 for long ton f. o. b.; crude cottonseed oil (at wholesale or for shipment), thirty-five cents for strictly prime in barrels and thirty-two cents per gallon for loose; cottonseed hulls thirty to thirty-five cents per 100 pounds delivered; linters, four and one-quarter to five cents for A, three and three-

quarters to four cents for B, and two and one-half to three cents for C. The exports of cottonseed oil from New Orleans from September 1, 1892, to date amounts to 2,335,950 gallons, against 4,113,760 for the corresponding period last year.

THE Lockhart Oil Mill & Powder Co., of Lockhart, Texas, received their charter on the 5th inst. The capital stock of the company is \$50,000. The directors are A. R. Chew, William M. Steele, Samuel Lessner, I. S. Lewis, of Lockhart, and D. Boaz, of Houston.

THE oil mill now in process of erection at Velasco, Texas, is being rapidly pushed forward to completion. Eighty-two carpenters and masons and as many more laborers are employed in its construction. The machinery has arrived and will be placed in position as soon as it is ready to receive it.

THE Elder Bros., of New Orleans, are now engaged in boring an artesian well at Mobile, Ala., for the cottonseed-oil mills at Three Mile creek.

A Big Tennessee Flour Mill.

THE big Noel flour mill near Estell Springs, Franklin county, Tenn., was started on the 3rd inst. under most flattering circumstances. A special train of two coaches, under the personal supervision of Messrs. M. J. C. Wrenne and George R. Knox, of the Nashville, Chattanooga & St. Louis Railway, arrived at the mill at 10.40 A. M. from Nashville. It had a party of two hundred of Nashville's solid business men on board, and after banqueting spent an hour inspecting the mill and machinery, which worked with great precision. This is one of the largest winter wheat flouring mills on the continent, and is without doubt one of the most complete flour mills of any kind or description in the world. The mill has a daily capacity of 2500 barrels, and the motive power is furnished by three 44-inch horizontal Leffel turbine wheels under a 24-foot head of water. The Elk river at this point makes a bend of three miles, returning again to a point but 300 feet from its former course. Upon the peninsula thus formed stands the mill buildings, three in number, fifty feet above any possible rise in the river.

The mill buildings are massive and imposing. The millhouse proper is six stories high, 154 feet in length by fifty-four feet in width. A warehouse 200 feet long and fifty-four feet wide has 32,000 square feet of floor surface. The elevator, which is the largest attached to a flour mill anywhere in the country, is built of wood covered with iron and has a capacity of 500,000 bushels of grain in a total of eighty-five bins. The mill machine proper was built by the E. P. Allis Co., of Milwaukee, Wis. The foundation, dam and excavating were done by Foster & Creighton, the carpenter work by Hughes & Rives and the iron and tinning work by Webb, Stevenson & Co., of Nashville. The protection against fire is complete, a steel tank being placed on the roof of the mill building which contains 10,000 gallons, to which are attached 1859 glass-top Grinnell automatic sprinklers. The capacity of the mill can be increased to 3500 barrels without delay to business or enlargement of the building.

A CONCESSION has been granted by the government of Mexico to the Pearl Fishing Co., of San Jose, for pearl oyster fishing around the San Jose island, which is situated in the Gulf of California, in front of Ensenada de Dolores and Punta del Mechub, to the north of the island of Espiritu Santo. The term of the concession is for sixteen years; the width of the fishing zone around the island about eleven miles, and the company must pay in the La Paz custom-house \$10.00 per ton of oysters taken the first three years, and \$12.00 for each ton the remaining thirteen years.

RAILROAD NEWS.

[A complete record of all new railroad building in the South will be found in the Construction Department, on page 35.]

Joined the Association.

The Southern Railway and Steamship Association has been increased by several important roads. Among them are the Alabama Great Southern, Alabama Midland, Cincinnati, New Orleans & Texas Pacific, East Tennessee, Virginia & Georgia, Louisville & Nashville, Mobile & Ohio and Nashville, Chattanooga & St. Louis. These additions give the association control of about all the railway business in the South, and make it one of the strongest associations of its kind in this country.

Interest Unpaid.

The announcement is made that the Louisville, St. Louis & Texas has defaulted in its semi-annual interest on its first mortgage bonds due August 1. The amount is \$160,000. The main line is 121 miles long, reaching from Henderson to West Point, Ky. It enters Louisville by using twenty-one miles of the Chesapeake & Ohio Southwestern. The reason given for the default is that the company has been using its net earnings for construction of new line. It expected to borrow funds to meet its interest, but owing to the present depression could not do so. As yet no action has been taken for the appointment of a receiver.

Official Railway Changes.

J. B. Haylow appointed chief dispatcher of the Birmingham Mineral line.

F. Kestler appointed chief dispatcher of the South & North Alabama.

James Cunningham appointed master mechanic of the Choctaw Coal & Iron Co.'s lines.

D. B. Henderson has been appointed president of the Galveston & Western Railway, vice Walter Gresham, resigned.

S. F. Parrott appointed general manager of the Columbus Southern to succeed Cecil Gabbett.

Henry G. Davis elected president, Stephen B. Elkins, R. C. Kerens, Arthur P. Gorman, John A. Hambleton, W. W. Taylor and Alexander Shaw, directors of West Virginia Central.

Thomas M. King, of Philadelphia, second vice-president of the Baltimore & Ohio, chosen president of the Pittsburg & Western Railroad Co., a portion of the Baltimore & Ohio system.

Gas Motors on Street Cars.

What is known as a gas street car is being tested in Indianapolis. The cars are of the ordinary size, but are constructed entirely of gas pipes, ranging in size from six inches down. These hollow tubes are neatly carved, so that to the average observer the fact that they are built of such material is not noticed. These pipes are heavily charged with gas, and with the aid of a boiler and the engines at work beneath the floor, it is said a run of thirty miles can be made without refilling the tubes. A speed can be obtained, it is claimed, equal to that of cars run by the electric method. It is said that one of the latter will cost \$6000 for its construction, while the gas car can be made for \$2000. Either artificial or natural gas can be used as the propelling power. It is further asserted by its inventor that to operate it a day of twelve hours will cost but \$1.14, while the expense of running an electric car for the same period will be \$6.00.

Chesapeake & Ohio Earnings.

The results of a year's business of the Chesapeake & Ohio are evidence enough of the superb management of that railway system. For the twelve months ending

June 30, 1893, the gross earnings were \$10,336,810, an increase of \$452,394, while the net earnings were \$3,204,048, an increase of \$764,123, or more than 30 per cent. This statement is singular from the fact that it is one of the very few roads whose increase in the net exceeds the increase in the gross earnings. The Chesapeake & Ohio statement is the more interesting because the promises of the previous year have been made good. The explanation of the large reduction in operating expenses in proportion to gross earnings is that half a million of extraordinary expenses such as construction, etc., were included in the operating expenses of the previous year, and \$250,000 as a minimum for the net earnings of the Big Sandy division. The surplus from earnings alone is \$323,982. Within the last week the rumor mongers have spread a story that the Chesapeake & Ohio was behind on payments for coal operations. Statements from the management prove the story to be false, and in the light of the figures from the yearly earnings it is simply ridiculous.

Texas Railway Projects.

The directors of the Galveston & Western, a short narrow-gauge road, which has excellent terminal facilities, have decided to change the line to standard gauge. It is understood that the Houston, East & West Texas will also be changed to standard gauge and connected with the Galveston & Western, and that the two will form the Southern division of the new trunk line from Kansas City to the Gulf. The Houston, East & West Texas now terminates at the Sabine river, 192 miles from Houston, but has a branch forty miles long to Shreveport, La. The extension to Kansas City, it is reported, is to be by way of the Kansas City, Pittsburg & Gulf, which is now being built towards the Sabine river from Joplin, Mo. This company has obtained control of the Pittsburg, Fort Smith & Southern, and has executed a contract with the Arkansas Construction Co., of Kansas City, to build the part of the system not now in operation. The entire length of the system will be 743 miles, sixty-five miles less than any other now in operation between Kansas City and Galveston.

Capt. William Davis, of San Antonio, the projector of the Galveston-San Antonio short line, advises the MANUFACTURERS' RECORD that subscriptions are being received for stock, and that its construction may begin in October.

Railway Economy.

The year of 1893 will be remembered as a year of economy on railways. Never before have so many employees been "laid off" or so many salaries reduced. In many cases the retrenchment has been absolutely necessary to avoid receivership. The suspension of manufacturing and business stagnation has caused a large decrease in freight revenue except on grain-carrying lines. The Chicago business, while fair, has made up but a small portion of the loss incurred by the light freight traffic. Consequently every line in the country has made sweeping reductions, and the great army of unemployed is constantly receiving accessions from the railways. The following figures will give only an idea of the extent of the general reduction:

Louisville & Nashville shops, along the entire system, will work on three-quarter time. Pennsylvania has laid off all construction gangs on the road. Baltimore & Ohio has stopped work on all improvements of main line. Georgia Central discharged 200 men from its Macon shops. Missouri Pacific discharged all soliciting agents and laid off construction gangs. All shops are working on short time. Chesapeake & Ohio Southwestern discharged one-third of its section hands.

Atchison, Topeka & Santa Fe reduced its force of hands 10 per cent. Denver & Rio Grande reduced all salaries 10 to 20 per cent. Chicago, Milwaukee & St. Paul reduced salaries of 3000 employees 10 to 20 per cent.

Railway Development Figures.

H. V. & H. W. Poor, the authorities on American railways and investments, have just issued the introduction to their manual for the year ending December 31, 1892. From it the following figures are taken: Total length of track in the United States January 1, 1893, 175,233.44 miles; net increase of mileage in 1892, 4,428.91. Liabilities of railway companies amounted to \$11,088,933,606, which included capital stock \$4,920,555,225, funded debt \$5,463,611,204 and other debts of about 700,000,000. The excess of assets over liabilities were \$392,651,276. In 1891 the excess was \$344,709,235, showing a gain of about 48,000,000 in 1892. The number of passengers carried in 1892 was 575,769,678, against 556,015,802 in 1891, a gain of nearly 20,000,000. The freight tonnage was 749,331,860, against 704,398,609 in 1891, a gain of about 45,000,000 tons. The South Atlantic States and Gulf and Mississippi States are formed into groups four and five and passenger earnings and averages for eleven years are given. In group four the average receipts for each passenger in 1892 were \$87.66, against \$93.73 in 1891 and \$133.58 in 1882, the largest year of all. In group five the average in 1892 was \$79.80, against \$84.15 in 1891 and \$139.29 in 1882. This shows how competition, railway legislation and other causes have combined to cut down railway profits, and the figures form a partial explanation of the debt with which many of the Southern lines are burdened.

Railroad Notes.

The Port Royal & Augusta is using the terminal facilities of the Georgia Railroad at Augusta, and all the switching will be done in the yards of the latter company. The engines of the Port Royal & Augusta will be stabled in the Georgia roundhouses and the passenger coaches will be built and repaired in the latter's shops.

The lease of the Chesapeake & Ohio Southwestern Railroad to the Newport News & Mississippi Valley Co. has been cancelled. The lease was cancelled by reason of the new State law prohibiting companies, associations and corporations of other States operating any railroad in Kentucky until they have become corporations of the State.

W. E. McNULTY, secretary of the Columbia (S. C.) Board of Trade, writes that the board is making an effort to secure the shops of the Florida Central & Peninsular road for Columbia. As yet, however, it has not succeeded.

ARCHIBALD H. TAYLOR has been appointed special master to examine the condition of the Baltimore & Lehigh road and the Baltimore Forwarding Co. and report to the United States Court.

THE Wilmington, New Berne & Norfolk has been completed from Wilmington to New Berne. It is eighty-eight miles long and shortens the distance by rail between the city nearly fifty miles. It traverses some excellent timber land and many tracts suitable for truck farms.

THE Chesapeake & Ohio has been instrumental in building and furnishing four buildings for the railway branch of the Young Men's Christian Association along its line. It has expended over \$20,000 for this purpose.

THE Northern Central Railway net earnings for June, 1893, as reported by the treasurer, were \$227,587.98. For 1892 they were \$24,560.17, showing about \$130,000

increase. For the six months ending June 30, 1893, the increase is about \$215,000 over the same period of 1892. The gain in June, 1893, is certainly remarkable, and shows how well the line is being managed.

THE attorney-general of Texas has prepared an application to the courts for the forfeiture of the charter of the Texas Western, a narrow-gauge line extending from Houston to Sealey, Texas, forty-three miles. It is alleged that the road is not kept in proper condition, is too dangerous to use for traffic, and that the company has not complied with the terms of its charter.

THE Rock Island has extended its local and through train service to Fort Worth, Texas. Trains began running into the temporary station in the suburbs of that city July 30.

THE MANUFACTURERS' RECORD noted in its issue of last week that E. O. McCormick, of the Cincinnati, Hamilton & Dayton, had accepted a position on the Cleveland, Cincinnati, Chicago & St. Louis at a salary of \$10,000 per year. It appears that the former company has now offered him \$10,000 to retain his position. This is abundant proof of Mr. McCormick's ability and reputation as a railway official.

THE name of the Newport News & Mississippi Valley has been changed to the Cincinnati, Ohio & Northwestern. The change is made necessary by an act of the legislature of Kentucky.

It is stated that the Mexican National is in the market for 400 box cars.

THE North Carolina Car Co., of Raleigh, is filling an order from the Seaboard Air Line for a number of cars, both box and cabooses.

THE report of Receiver W. B. Sparks, of the Georgia Southern & Florida, shows that the gross earnings for the month of June, 1893, were \$69,983.69. The gross earnings for the month of May, 1893, were \$65,546.91, or an increase of \$4,436.78 for June over May. The gross earnings for June, 1892, were \$60,398.18, or \$9,585.51 less than for June, 1893. This shows that the business of the road has been steadily increasing under the management of the receiver.

MR. FAIRFAX S. LANDSTREET, as receiver for the Blackwater Boom & Lumber Co., of Davis, Tucker county, W. Va., sold on the 3d inst. at Piedmont the immense plant of that company. Mr. W. H. Osterhout, of Rudgeway, Pa., was the purchaser for the sum of \$110,000. The extensive plant of the company includes also about 50,000 cut logs in the Blackwater river and many thousand acres of valuable timber land. Mr. Osterhout will at once commence the erection of a large saw-mill plant to replace the one recently destroyed by fire.

THE Savannah, Florida & Western Railway forwarded from Gainesville to Eastern points the present season nearly 600,000 boxes of oranges and about 300,000 packages of vegetables. Last year 180,000 packages of vegetables were handled at that point by the Savannah, Florida & Western. The aggregate of the shipments this year over this road is much larger than ever before.

A BALTIMORE official of the Pennsylvania denies that that company will use long-distance telephones in place of the telegraph in operating the road. He says that the scheme would be impracticable, as a railroad company must reach its men, conductors especially, along the line with messages, properly signed, and the only way to safely transmit orders and instructions to such employees is by telegraph.

DIRECTORS of the Baltimore & Drum Point have approved a contract with J. H. McCreery and others, of Washington, to build the road from Millersville, Md., on the Annapolis, Washington & Baltimore, to Drum Point harbor, a distance of sixty-five miles. It is proposed to establish a summer resort at Drum Point.

Manufacturers' Record.

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BALTIMORE, AUGUST 11, 1893.

INCREASED activity in Southern real estate is one of the most encouraging signs of the times, and, too, a direct result of the financial depression so widespread in this country. When good bonds go a-begging, investors look to real estate as a secure place for their money. Never was there a time when such bargains in real estate in the South could be obtained as are now procurable. There are great opportunities in the South just now for live real estate men.

THE feeling of safety and the resolution to avert any panic by combined action which exists among the business men of Wheeling, W. Va., was demonstrated when the Exchange Bank of that city suspended a few days ago. As soon as the bank found that it was unable to meet the demand for ready money one of the largest merchants of the town announced that he would cash all checks on the bank presented him. Nearly 200 of the leading merchants and manufacturers signed the following appeal to the people:

To the Citizens of Wheeling:

We, business men and depositors in the banks of the city, do most earnestly ask, for the good name of our fair city, that all depositors refrain from withdrawing their deposits from our banks at this time, and that we make our deposits as usual. We feel sure that our banks are all perfectly sound, and no depositor has cause for any alarm. Let us take pride in the fact that Wheeling has always stood high in the commercial world, and let us do nothing at this time that may cause us regret later.

As a result of these actions no run was made on any other bank and business confidence was entirely restored. The suspended bank, it is reported, has assets which will amply secure both depositors and stockholders.

Fewer Banks But More Solidity.

Our usually rational friend, the *Iron Trade Review*, of Cleveland, Ohio, is offended by our comparison of bank failures in the West and South, and takes exception to the comparative figures published in our issue of July 28, commenting thus:

Of course the inference which it is expected the public will draw from such statistics, is that the banks of the South are on a more stable basis than those of the West. Such statistics prove nothing, and are scarcely to be considered as even suggesting anything. They are about as valuable as vital statistics would be, showing that fewer negroes than white people died in the United States in a given period; and the inference that, therefore, negroes are more robust than whites, would be quite as fully warranted, as is the assertion as to the soundness of Southern banks, based on the figures quoted above.

The reason the South hasn't as many bank failures as the West is that it has far fewer banks to fail.

As the *Iron Trade Review* objects to our comparison of the totals of suspensions and capital involved, we are perfectly willing to allow the comparison to rest upon the basis suggested by our friend, namely, that of proportion or percentages. Comparing in this manner the bank suspensions in the South and West—we include the Pacific States in the West—the showing is as follows:

	South.	West.
Total number banks.....	2,226	7,714
Total capital.....	\$309,151,425	\$523,883,250
Number suspensions.....	37	251
Percentage suspensions.....	.017	.032
Capital involved.....	\$4,392,100	\$31,958,933
Percentage capital.....	.021	.061

The number of banks and their capital are taken from the latest issue of the *American Bank Reporter*, and are of the date February 18, 1893. These figures include State banks, trust companies, private banks, savings banks and national banks. The statement of suspensions published in our issue of July 28, and referred to by the *Iron Trade Review*, was compiled upon the same basis. Comparing totals only, the number of bank suspensions in the West between May 1 and July 22 was seven times as great as the number reported in the South, the capital involved in the Western suspensions being also sevenfold greater than the amount involved in the South. Making this comparison on the basis of the proportion of suspensions in each section, it will be seen that the West has suffered nearly three times as severely as the South. If this basis of comparison be a more satisfactory measure of stability we are glad to gratify our friend in Cleveland by presenting the matter in this light. The stability and soundness of the South stand out boldly, no matter in what manner the situation be analyzed.

The Financial Situation.

Scarcity of small bills is the worst feature of the situation at present. At the rate gold is coming into the country it may replace for a time at least the silver certificates under \$20.00. August 8 nearly \$4,000,000 was ordered for import and the week ending August 12 may see \$20,000,000 worth on its way to America. Wheat exports continue to be very extensive. The shipments for the week ending August 5 were 5,622,000 bushels, against nearly 4,364,000 during the previous week, 3,979,000 the same week of 1892, 4,031,000 bushels in 1891 and 2,166,000 in 1890. There is no reason why these exports should not continue during the season in order to supply the demands from abroad. The collapse of provision "corners" at Chicago, while causing local distress, will tend to improve the grain market, and the failures of Cudahy and his following will remove a disturbing element that has seriously affected legitimate trade in cereals.

An encouraging feature in New York is the appreciation in value of investment stocks. Although the bear element was never more thoroughly organized than at present, securities are resisting their attacks more strongly, indicating a greater feeling of confidence among investors. A group of fourteen leading railways show a gain of from four to twelve points in the period beginning July 26 and ending August 4. These

stocks include Chicago & Northwestern, St. Paul, New York Central, Manhattan Elevated and Louisville & Nashville. The strength of the latter is especially noticeable. July 26 it touched forty-seven and a-half; August 4 it reached fifty-eight, a gain of ten and a-half points.

The closing of mills and factories continues. The Philadelphia *Press*, after a canvass of localities in New England, Illinois, Pennsylvania and other industrial centres, estimates that 600,000 operatives are now idle, of whom 36,000 are in New York city. Advices from the South thus far show that while a number of plants have curtailed production, comparatively few have suspended operations entirely. The only large industrial corporation which became embarrassed during the week was the Etowah Mining Co., of Gadsden, Ala., which has nearly four times as much assets as liabilities.

There continues to be a sharp contrast in general conditions of trade in favor of the South as compared with other sections. Two more suspended banks have resumed or are about to resume. A number of new factories will begin operations as soon as money becomes more plentiful. The record of failures for the week ending August 3 in the South is forty-one, against 237 in the West and Northwest, sixty-eight in New England and sixty-nine in the Middle States. Of the Southern failures twelve were over \$5000. Of the Western and Northwestern eighty-two were over \$5000.

At the present writing the effect of the President's message in favor of repealing the silver bill cannot be estimated. There is no doubt that the repeal will be strongly resisted by the Populists and silver men in Congress, but the belief is that a substitute much modified will be adopted.

False Figures About the South.

We would like to know where the New York *Press* obtained these figures for one of its "Tariff Pictures:"

The first six months of 1892 saw	21
new textile factories started in Southern States.	
The corresponding period of 1893, with free trade in prospect, saw only	9

If these "pictures" are merely the creations of the artist's brain, of course the accuracy of the figures is of no consequence, but if they are designed to present facts, the one reproduced above is singularly astray. Those who are familiar with the Southern textile industry will recognize at once the entire absurdity of these figures, but unfortunately the majority of those who see the paragraph know nothing about the South, and therefore unhesitatingly accept the statement as an evidence of Southern retrogression. We regret deeply the occurrence of such a glaring error in a paper that reaches so wide a constituency of intelligent readers, and we invite the attention of the *Press* to the correct figures for the two periods mentioned in the hope that a correction will be made.

We do not quite understand what is meant by "started," but we interpret it to mean organized, as the formation of new companies is the only measure of confidence in the future of the industry. The carefully kept records of our office, made up from returns direct

from the companies themselves, show that thirty-one new textile companies were started in the South during the first half of 1892, instead of twenty-one as given by the *Press*, and during the first six months of 1893 the number was not nine, but forty-eight. The following list includes the new textile companies organized in the South from January 1 to June 30, 1893, the * indicating that the mills are now under construction:

Anniston, Ala.—Afro-Alabama Cotton Mill Co.
Eufaula, Ala.—Chewalla Cotton Mills.
*Florence, Ala.—Cherry Cotton Mills.
Uniontown, Ala.—Uniontown Cotton Mills.
Americus, Ga.—Sumter Cotton Mfg. Co.
*Harmony Grove, Ga.—Harmony Grove Mills.
Hartwell, Ga.—Hartwell Cotton Mills.
*Marietta, Ga.—B. K. Couper.
New Orleans, La.—Semmes-Parker Mfg. Co.
Enterprise, Miss.—Kemper Knitting Mills.
Meridian, Miss.—Meridian Knitting Mills.
Bessemer City, N. C.—Bessemer City Cotton Co.
Concord, N. C.—Concord Cotton Mill.
*Elkin, N. C.—Chatham Mfg. Co.
*Gastonia, N. C.—Modena Cotton Mills.
*Gibsonville, N. C.—Berry Davidson.
*Greensboro, N. C.—Southern Finishing & Warehouse Co.
High Shoals, N. C.—High Shoals Co.
*King's Mountain, N. C.—Dilling Cotton Mills.
*Maxton, N. C.—Ross & McKinnon.
*Mooresville, N. C.—Mooresville Cotton Mills Co.
New Sterling, N. C.—Riverside Cotton Mills.
*Newton, N. C.—Carolina Cotton Co.
Rutherfordton, N. C.—Rutherfordton Cotton Mill.
*Statesville, N. C.—Statesville, Cotton Mills.
*Sweptown, N. C.—Falls of Neuse Mfg. Co.
Barnwell, S. C.—Carolina Mfg. Co.
*Batesburg, S. C.—Batesburg Cotton Mfg. Co.
Board Landing, S. C.—Horry Cotton Mill Co.
Charleston, S. C.—Edisto Cotton Mills.
Cheraw, S. C.—Cheraw Cotton Mills.
*Columbia, S. C.—Columbia Mills Co.
Hampton, S. C.—Hampton Cotton Mills.
Johnson City, S. C.—Johnson City Cotton Mill.
Jonesville, S. C.—Jonesville Mills Co.
Laurens, S. C.—Ware Shoals Mfg. Co.
*Lockhart Shoals, S. C.—Lockhart Shoals Mfg. Co.
Rock Hill, S. C.—Allen Bating Co.
St. Matthews, S. C.—Calhoun Cotton Mill.
Seneca, S. C.—Courtenay Mfg. Co.
*Union, S. C.—Union Cotton Mill.
*Peacher's Mills, Tenn.—Peacher's Mill Co.
*Marble Falls, Texas—Marble Falls Cotton Mill.
Blackstone, Va.—Blackstone Textile Co.
*Newport News, Va.—Newport News Knitting Mills.
Portsmouth, Va.—Portsmouth Cotton Mills.
Roanoke, Va.—Roanoke Cotton Mills.
Winchester, Va.—Williams Bros.

It will be seen that at least twenty of these enterprises have materialized to the extent of putting the mills under construction. We have before us the names of nine mills, the erection of which was commenced prior to January 1, which have been completed and put in operation during the first six months of this year. They are:

Swift Cotton Mills, Elberton, Ga.
Meridian Knitting Mill, Meridian, Miss.
Atherton Cotton Mills, Charlotte, N. C.
Highland Park Mfg. Co., Charlotte, N. C.
Erwin Cotton Mill, Durham, N. C.
Pilot Cotton Mills, Raleigh, N. C.
Kershaw Mfg. Co., Camden, S. C.
Gaffney Mfg. Co., Gaffney, S. C.
Basic City Knitting Mills, Basic City, Va.

This list is only partial and omits entirely the numerous additions to existing plants, a great amount of this work having been done since the first of the current year. We hope the *Press* will be kind enough to correct its unfortunate mistake and at the same time reveal the source of its misinformation. We have only to add that the textile industries of the South are not suffering from free-trade prospects or from any other causes. While Northern mills are closing down for lack of business, most of the Southern mills are running as usual.

CORRESPONDENCE

Railway Equipment Wanted.

ST. MARTINVILLE, LA., August 5.
Editor Manufacturers' Record:

We want to buy fifteen miles of 35 or 40-pound rails; also two engines, three passenger coaches, one mail and express car, twelve flat cars and six box cars, all for a three-foot narrow-gage road. Material must be as good as new.

TECHE RAILROAD CO.

Water Works and Light Plant for a City.

FRANKLIN, KY., August 5.
Editor Manufacturers' Record:

We wish to be put in communication with some parties who would like to take franchise to put in a good system of water works and an electric-light plant in a city of 2500 population and surrounded by a fertile country, located on main line of Louisville & Nashville Railroad, 130 miles from former and fifty from latter place. County and city are both clear of debt. We calculate to let bids for franchise by September 1, if possible.

M. S. HARRIS, Mayor.

Refrigerating Plant Wanted.

FRONT ROYAL, VA., August 5.
Editor Manufacturers' Record:

We have here a system of water works equal, we think, to any in this land of ours. It is a gravity system with an elevation of 258 feet above centre of town, and without the use of engines, simply the gravity pressure, we throw water ninety to 100 feet in the air through a 2½-inch hose and 1¼-inch nozzle. Our people are proud of it, but the water is hardly cold enough for drinking in summer without use of ice. This past winter we stored an ample supply of ice for domestic use, but the winter was unusually cold. Another year we shall need an ice manufactory. Will you please place us in correspondence with some of the manufacturers of these machines.

FRONT ROYAL & RIVERTON ICE CO.,

H. L. COOK, President.

Gold Mining.

The Engineering and Mining Journal says:

The revival of interest in gold mining has extended to the South, and the deposits of Georgia and Alabama seem to be in a fair way to renewing their place as factors in our gold supply by the introduction of improved machinery and methods of concentrating and working the sulphurets which constitute a considerable part of the value of the ores. None of these mines have been worked much below the water level, owing to the presence of sulphurets, which prevented them from being treated economically by the ordinary stamp mill and amalgamator. Until very recently the practice there has been much behind that adopted in the West, but this is likely to be changed in the near future.

There are also many fine gold properties in the Carolinas which can be made very profitable by the use of the most advanced methods when properly managed. Some months ago the Carolina Sulphuric Acid Manufacturing Co. was organized at Blacksburg, S. C., to mine pyrites ores and manufacture sulphuric acid, but the projectors of the enterprise later on determined to broaden the scope of their company with a view to the erection of large works for utilizing the gold ores and pyrites so abundant in that section for the extraction of gold and the manufacture of sulphuric acid and other by-products. With the attention that is now being turned to gold mining this Blacksburg company, owning some excellent properties and controlling others, ought to prove a very attractive enterprise. When carried out as projected it will make Blacksburg an important point for the handling of Southern gold ores, as it is intended to establish a large plant for smelting ores from any mines adjacent to that place.

GENERAL NOTES.

Brief Mention of Various Matters of Current Interest.

DR. HENRY FROEHLING, of Richmond, Va., the well-known chemist, has gone to Chicago, where he has been called to act as a judge of awards in the mining exhibit of the World's Fair.

THE Little Kanawha valley is excited over the reported discovery of a paying lead mine that has been struck. The shaft that is being dug is located on the bank of the Little Kanawha, a short distance above lock No. 1. The shaft is down twenty-five feet and a vein has been struck, the ore of which is thought to contain lead.

THE report sent out from Attalla, Ala., that the furnace at Gadsden had closed down on account of the failure of the Attalla Mining & Manufacturing Co. was not true, as the furnace is still in blast and very likely to remain so for an indefinite period.

THE first bale of new cotton of the crop of 1893 was received in Eufaula, Ala., on the 1st inst. It was raised in Quitman county, Ga., and was sold to John W. Tullis & Co. for ten cents a pound. It was classed good middling.

THE pipe and foundry company's plant at Radford, Va., which has been idle since January, went into full operation again on the 2d inst. By the 15th inst. more than 400 men will be at work, and \$17,000 will be distributed monthly.

MARSHALLVILLE, GA., has now under successful operation one of the best canning factories in the State. It is owned by the Marshallville Investment Co. and is operated by J. E. Haslam. It has a daily capacity of from 5000 to 8000 cans, and sixteen skilled workmen are required to do the work.

THE Steam Gin, Cottonseed Oil & Manufacturing Co.'s plant at Taylor, Texas, which has been closed for several months past, resumed operations on the 1st inst.

THE Jacksonville Clearing Association, of Jacksonville, Fla., which represents four national and two State banks, has been in existence about a year and has proved a pronounced success. During last week its exchanges amounted to \$258,143.87, balances \$37,557.66; total business transacted \$295,701.53. For the year ended July 31, 1893, the total exchanges were \$2,058,747.69, total balances \$375,887.939, average monthly exchanges \$1,715,623, average weekly exchanges \$359,913; total business transacted during the year \$24,346,356.

MR. JAMES L. CARR, general manager of the Ballard, Webb & Burnside hat factory at Orange, N. J., was in Dallas, Texas, on the 1st instant looking over the ground with a view of establishing a large hat factory in that city. Should the water found be suitable for the manufacture of hats the firm will erect a new plant that will employ at the outset 100 operatives.

THE new courthouse at Llano, Texas, is one of the finest in the Southwest. It cost \$50,000 and has just been completed. It is three stories high and the materials used in construction were pink granite and white marble, giving it a very handsome exterior. It is richly furnished and artistically decorated within.

A CHARTER of incorporation has been granted to the First National Fire Insurance Co., of Fredericksburg, Va., with a capital stock of \$300,000. The incorporators are John W. Bond, of Washington, D. C.; W. J. Mosley, of Philadelphia, Pa.; George D. Young, of Georgetown, D. C.; T. F. Meany, of Washington D. C., and W. E. Towles, of Calpeper, Va. The company has been organized by the elec-

tion of the following officers: W. J. Mosley, of Philadelphia, president, and E. W. Wallace, secretary. The principal office of the company for the transaction of business will be at Fredericksburg, Va.

MR. C. H. BETTS, of Liverpool, is in Port Royal, S. C., arranging to start a line of steamships between that city and Liverpool, which has already been noted in these columns. The Johnston Line vessels will be put in service and the first will leave Port Royal about September 15.

MR. THOMAS F. KENNERLY, of Roanoke, Va., has returned from Franklin county, where he has been engaged in opening up a rich mica mine on Chestnut mountain, near Snow creek. Mr. Kennerly thinks it is one of the most valuable deposits in the country, and says they are now taking out sheets of mica 8x10 inches, and as yet are only prospecting on the surface.

THE following freight was carried North from Jacksonville, Florida, on the steamer Seminole on Saturday last: 364,000 feet of lumber, 8429 bundles of shingles, 6865 crossties, 324 logs of cedar, 450 barrels of rosin, 108 barrels of turpentine, fifty cases of cigars, twenty-five packages of fruit, 100 bales of tobacco, 100 bales of moss, 100 bales of sponges and 170 miscellaneous packages.

INFORMATION has been received at Macon, Ga., of the failure of B. W. Hitchcock, of New York. Mr. Hitchcock is the founder of Hitchcock's Georgia colony at Adams Park, on the East Tennessee Railroad, in Twiggs county, a few miles below Macon. He invested about \$100,000 in the project, and ran special excursion trains from Macon and Atlanta two years ago and had great auction sales of building lots. His idea was to establish a large city, principally of agriculturists.

THE bank of Williams & Goode opened for business at Boydton, Va., in March. Its statement for four months shows undivided profits of \$4,164.29, or over \$1000 per month.

THE city council of New Berne, N. C., has adopted resolutions urging the North Carolina representatives in Congress to secure an appropriation for making a ship channel at Ocracoke inlet; also to secure funds for completing the proposed Federal building at New Berne.

CAPT. H. A. DEKAY, of Pocomoke City, Md., has a side-wheel steamer to be used in carrying passengers between Pocomoke City and Snow Hill, Md. The peculiar feature of the boat is that gasoline is used exclusively for fuel. It is said to be the only side-wheel steamer in this country using gasoline.

THE Fidelity Trust & Loan Co., of Mobile, Ala., a national building and loan association, organized a local board in Abbeville, La., on the 5th inst. The following officers will manage the board: Dr. J. T. Abshire, president; Alfred Le Blanc, vice-president; A. J. Godard, secretary and treasurer, and J. R. Kitchell, attorney. The board is to begin operations at once.

THE Mechanics & Traders' Insurance Co., of New Orleans, is now making the necessary alterations and improvements in their building on the corner of Carondelet and Common streets to fit it up as a first-class office building. When the changes are completed the company will have forty offices to rent, fitted up with all the modern improvements. There will be a wide and handsome entrance with tiled floor, and in addition a most complete and rapid elevator.

THE stockholders of the Diamond Granite Co., of Augusta, Ga., held a meeting in that city last week for the purpose of organizing. The meeting was well attended

and officers and board of directors were unanimously elected, as follows: President, Peter G. Burum; secretary, Edward S. Johnson. Board of directors: Charles Estes, W. F. Boa, T. O. Brown and John H. McKenzie. The granite quarry is one of the finest in the whole country and is situated a few miles from Hutchins's station, in Oglethorpe county. A report was read at the meeting which stated that the property of the company and the quarry were in a flourishing condition, and that the outlook was very flattering for a prosperous business in the near future.

MEMBERS of the bar of Birmingham, Ala., have published a card signed by the attorneys of the city stating that they will advise their clients not to press claims for debts during the next ninety days unless for special cause. This action is taken to prevent any one from making an assignment because of the trade depression.

Recent Publications.

[Any of the publications mentioned in this column will be sent postpaid upon receipt of price by the Manufacturers' Record Publishing Co., Baltimore, Md.]

HANDBOOK OF ALABAMA. A complete index to the State, with map. By Saffold Berney, Mobile, Ala. Published by the author. \$2.50.

We know of only two handbooks of Southern States which can be regarded as complete and accurate. These are Berney's Handbook of Alabama and the Handbook of North Carolina, the latter of which is published by the commissioner of agriculture of that State. Berney's Handbook is planned upon a comprehensive scale and contains a large amount of matter not usually sought for in such books. More than one-fourth of the nearly 600 pages is devoted to the laws and government of Alabama, the State constitution being printed in full, with an index. The government of the State, its State and county organization and political divisions, its election laws and the laws relating to the holding of office are fully explained. The tax laws and the business laws and statutes form the subject of two important chapters, the laws being carefully summarized and classified. This information is of great importance, and it properly occupies a conspicuous place in the book. The educational system and institutions of the State are treated at considerable length, and the past and present convict systems form the subject of a special chapter prepared by Col. R. H. Dawson, president of the board of inspectors of convicts. The geology of Alabama is treated briefly in a chapter prepared by Prof. Eugene A. Smith, State geologist. The iron and coal industries are given each a chapter, but to our mind the treatment of these two greatest resources of the State is not in proportion to the importance of the subject. The matter is good as far as it goes. The agricultural characteristics of the State are clearly defined, and peculiarities of soils and crops in the various divisions of the State are set forth in a convenient manner. A chapter on cotton manufacturing in Alabama by Henry V. Meigs, of Macon, Ga., is a very forcible demonstration of the advantages of the South in this branch of industry. Only a few pages are devoted to the forests of the State, but a good deal of well-condensed information is presented in small space. The essential particulars about the railroads and telegraph lines are given, and there is an interesting chapter devoted to the waterways of the State. The book is well supplied with statistical data, largely from the eleventh census, and there are several other chapters of general and special information in addition to those named above. There is an excellent map of the State, printed from the plate of the geological survey. The book is well arranged, well printed, and of unquestionable value as a cyclopedia of Alabama.

MECHANICAL.

Notes on World's Fair Exhibits.

[From our own Correspondent.]

CHICAGO, August 7.

ART EMBOSSEING MACHINE CO.

In section 14, column F, 33, machinery hall, the Art Embossing Machine Co., of Indianapolis, Ind., makes an exhibit of wood embossing machinery and its product. The product of this machine, although like hand carving in many respects, in other

roll, the pressure applied imprints the design and the heat gives it a beautiful color and finish. A glance at variety of designs shows that any design whatever may be easily and cheaply placed upon any kind of wood that is fit for manufacturing purposes. All kinds of moldings, chair backs, furniture patterns, casings, interior finishings, and any convex or concave stock can be embossed with equal facility.

DAKE ENGINE MANUFACTURING CO.

The Dake Engine Manufacturing Co., of Grand Haven, Mich., has a display of its

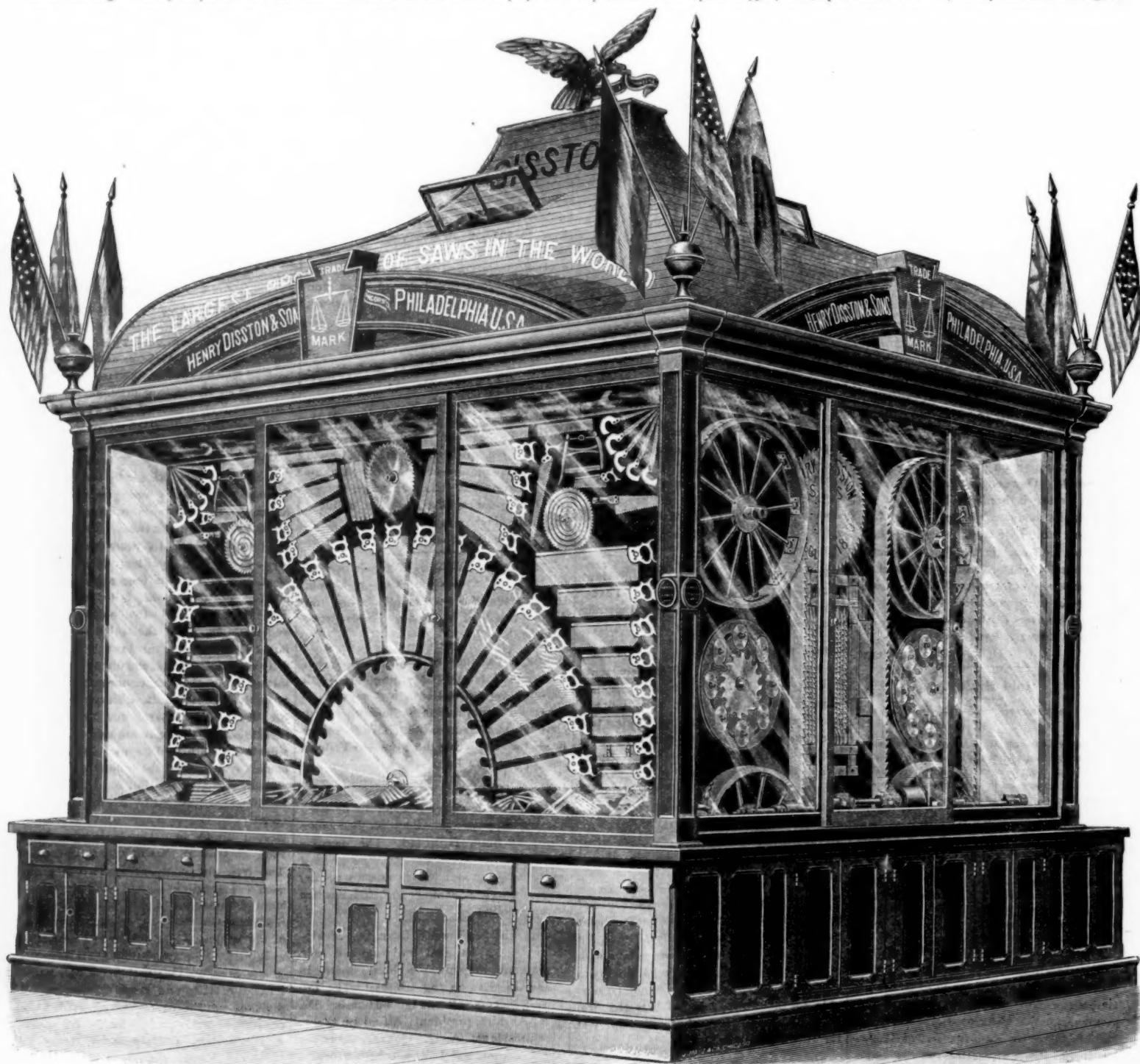
oil, started and stopped. It is economical in use of steam, in space and keeping in repair. It can be attached direct to the work to be done. It is something entirely new in the way of a steam engine and appears to be quite successful. They are built from one to twenty-five horse-power.

HENRY DISSTON & SONS, INCORPORATED.

Henry Disston & Sons, Incorporated, of Philadelphia, have a very large exhibit in machinery hall, section 14, column F, 34, consisting of the various articles manufactured by them. Their space is 35x17 feet, upon

with polished and carved apple handle and also their No. 7 hand saw, which is the standard saw upon which the firm has built up its reputation.

The reverse side of this case shows an inserted-tooth circular saw sixty inches in diameter, also in motion, and grouped around it are samples of crosscut saws, showing all the different styles of teeth manufactured. We note amongst these samples of Humboldt, California and Toledo Blade crosscut saws, which are made from a new process aluminum steel. These saws are very finely finished throughout



THE EXHIBIT OF HENRY DISSTON & SONS, INCORPORATED, AT THE WORLD'S FAIR.

respects is better, because it can be produced in large amounts, quickly, cheaply and with the same degree of neatness and finish throughout.

The principle of the machine is as follows: A brass cylinder with any design whatever cut in it is placed upon a hollow mandrel, into which a gas or gasoline burner is inserted for the purpose of heating the die. The table, by means of a pilot wheel, is raised or lowered to suit any thickness of stock, and when the die has become sufficiently hot the lumber is simply fed between the die and the feed

double reciprocating square-piston engines in machinery hall, column G I, 37. They are especially adapted as a steam motor for running dynamos, ventilating fans, blowers, centrifugal pumps, steam launches, steering engines for large steamboats, marine and mining hoists, steam feed for saw mills or stationary engines. This engine will run either way and has no dead centre; therefore is always ready to start when the steam is applied. It has but few parts to care for and get out of order. It requires no skilled mechanic to run it and take care of it. All it needs is to be kept

which they have erected five showcases, the largest of which is 18x16 feet, and has a display of goods on each of the four sides. On one side of this large case they show a solid-tooth circular saw sixty inches in diameter in motion. This is the size most used in the latest patterns of saw mills and is fitted up with their celebrated gullet tooth. This saw is surrounded by different patterns of hand saws and other general lines of carpenters' tools manufactured by this firm. Among the hand saws we note samples of their celebrated D 8 pattern, their Acme No. 120, the No 12,

and add greatly to the attractiveness of the display.

On one end of the case is shown a set of gang saws fitted to a gate, illustrating the manner in which the saws are used in a saw mill. On either side of this are large band saws revolving over pulleys, and grouped in between are nests of small circular saws, which are also in motion for the purpose of showing those not acquainted with the method of running different patterns of saws the manner in which they are used in manufacturing lumber of various kinds. To the rear of the large case

they have a showcase specially made for exhibiting band saws. These saws are shown in coils as shipped from the factory, and on the lower part of the case are two band saws twelve inches wide, which is the largest size made. On the upper part of the case are ten coils of narrow widths of band saws with two groups of nine saws each. These band saws are all made of Disston's celebrated aluminum steel, which is the best metal for this purpose that has yet been produced, and which is manufactured exclusively by them.

Henry Disston & Sons, Incorporated, are one of the largest manufacturers of files in the United States, and in connection with their exhibit of saws, etc., they show three cases of files which are arranged in different attractive designs of all the various shapes, sizes and cuts of files known to the trade. There are in all about 3000 different pieces used in this display, including all shapes and sizes, from the large 18-inch flat files for heavy, rough iron work

friction clutch couplings, etc. The display is driven by a clutch pulley attached to the main line of shafting overhead and belts down to a receiving pulley keyed to a quill supported by bearings entirely independent of the solid shaft, and which, by means of a friction clutch coupling, one part being attached to the quill, the other to the shaft, enables any part or all the machinery to be put in motion at the same time. Another exhibit put in by the same company can be seen in the building of electricity, which also consists of a counter shaft about thirty-five feet in length. This is supported by bearings of the ring-oiling type, which are particularly noted for their economy in saving oil, as this is prevented from working out of the ends by small devices attached for that purpose. From seven friction clutch pulleys on this shaft are driven an equal number of electrical machines built by the Fort Wayne Electric Co., Fort Wayne, Ind., thus enabling any one of the dynamos to be in operation at

to use the current from an incandescent light or other continuous current circuit without interfering with any lights or motors in that circuit. This arrangement also cheapens the cost of the necessary plant, as the same dynamo that operates the drill can also operate the lights and any motors used, such as pumps, hoisting machinery, etc. These machines are strong and durably built, the solenoids being wound on a brass tube with metal flanges at the ends to prevent the wire from slipping off and to give them the proper form.

The machine for regular mining work will strike a blow of 250 pounds at each stroke, and will drill a hole one and a-half inches deep in the hardest granite in a minute, using a drill one and a-half inches in diameter. The length of stroke can be varied as desired from four to eight inches. The drill is designed to drill holes one and one-quarter to two inches in diameter and from five to ten feet deep. When in operation it absorbs about two horse-power and

are patented. This machine is twelve feet high, weighs nearly thirty-two tons, and its receiving hopper is eleven feet in diameter. Its capacity for ordinary macadam is 150 yards per hour. When operating at its full capacity about 125 horse-power is required. The machine occupies a floor space of six feet six inches by two feet ten inches, is four feet high and weighs 1300 pounds when crated for shipment. Another machine well worthy of notice is a concentrator using air. The bellows which furnish the air currents are actuated by a sharp blow that can be easily adjusted to any degree. The air currents are forced through a simple valve and distributed into five brass boxes, over the tops of which the ore passes. The tops of these boxes are fine screens and the boxes are filled with shot varying in size from coarse to fine. The object of the shot is to reduce and distribute the air currents which pass from the lower part of the boxes up through the shot, thence through the screen, striking the ore on its way over the tops of the boxes. The ore or pulp is sharply agitated and slightly lifted from its bed, exactly as if the actuating element were water instead of air. In settling back the heaviest particles of mineral gravitate to the bottom of the bed and are discharged by the "take-off," while the gangue flows on over all the boxes to the tailings spout. The air currents and the take-off are so finely adjustable that the slightest difference in specific gravities of the minerals is sufficient to facilitate their separation. This dry concentrator will handle pulp ranging from twenty to eighty mesh without further sizing. It has a capacity of from four to twelve tons per day of twenty-four hours, according to the gravity of the mineral to be concentrated.

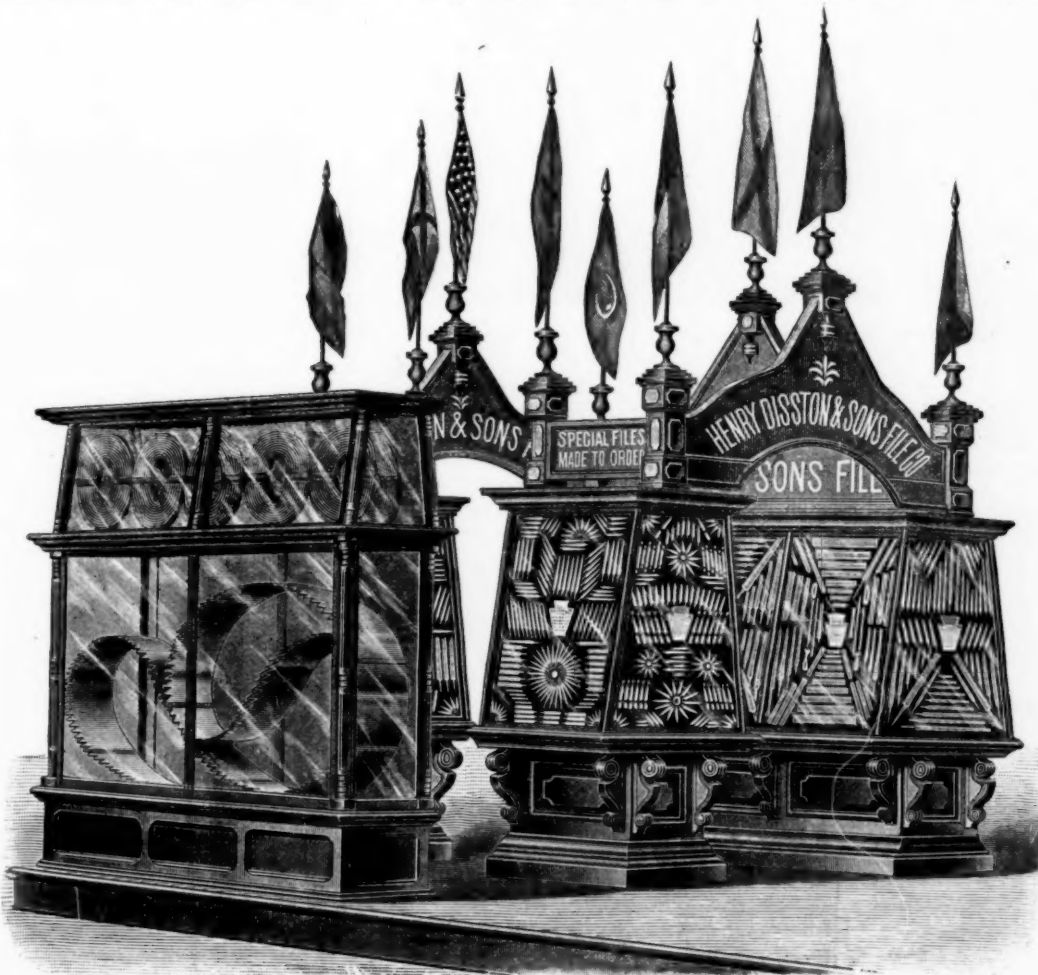
CHICAGO IRON WORKS.

The Chicago Iron Works, of Chicago, has an extensive exhibit in the mines and mining building. A 400-horse-power direct-acting hoisting engine for deep mining is one of the features. This is the general type engine used in the deep mines in the West. It is provided with reels for flat wire rope, each reel being independent. The engine is very complete in its every detail, and has all the improvements modern science has made known. A number of smaller engines of the same general character are shown for depths not exceeding 1000 feet. Cars suitable for mine or metallurgical work, blowers, stone crushers, crushing rollers, lead-smelting furnaces, roller mills, Triumph ore concentrators and other machinery of this character are displayed. The entire exhibit is one of the greatest interest to the mining engineer, and will well repay careful examination.

Electric Hoisting Winches for Stevedore Work.

An interesting example of an advantageous substitution of electrical power for that of steam is afforded in the installation of electrical motor hoists which have been in operation during the past two years and a-half on the wharves of Sanderson & Sons, in Brooklyn, where the Wilson transatlantic steamers discharge. The installation made by Messrs. Curtis & Dean comprises nine ten-horse-power general electric hoists of the drum and winch-head type in continual use loading and unloading the vessels which are constantly arriving and departing. The driving motors are of the well-known bi-polar type.

When the hoists were first installed opinions were freely expressed that they could not possibly do the work as cleanly nor as rapidly as the donkey engine, and that they would soon get out of order, prove costly to repair and give way to the triumphant returning steam hoist. The workmen especially viewed the innovation with disapproval. The hoists have been in operation for two and a-half years and



THE EXHIBIT OF HENRY DISSTON & SONS, INCORPORATED, AT THE WORLD'S FAIR.

to the small three-inch taper saw file used in sharpening hand saws and other small work.

The cases are built in a very attractive manner, the largest case having a dome roof surmounted by a large American eagle in gold. The woodwork is painted a rich maroon color with gold finish, adding greatly to the beauty of the finely-finished steel tools. The interior of the large case is fitted up in hardwood as an office, where a representative of the firm takes pleasure in answering all questions. The entire display is a most handsome one and reflects great credit on the exhibitors. They have for distribution numerous cards, pamphlets and price-lists illustrating the different articles manufactured.

FALLS RIVET & MACHINE CO.

One of the exhibits to be seen in machinery hall, which attracts considerable attention, is the display of the Falls Rivet & Machine Co., Cuyahoga Falls, Ohio. This consists of a short shaft about twenty feet long supporting friction clutch pulleys,

the same time by engaging or disengaging the friction clutches. This material is worthy of the closest inspection, as the Falls Rivet goods are installed in many of the largest electric-light and street-railway stations in the country, as well as in a number of the larger manufacturing establishments.

MACKAY ELECTRIC RECIPROCATING TOOL CO.

The Mackay Electric Reciprocating Tool Co., of Boston, Mass., has on exhibition several of its Mackay electric mining drills. One is the regular size mining drill and another a smaller drill for plug or block holes. The principle of the machine is the well-known coil and plunger, the plunger or armature of which carries a sliding commutator, which is ingeniously designed to automatically change the current from the upper to the lower coils of the solenoids alternately, but without breaking the circuit at any time, thus giving a continuous reciprocating movement to the armature or plunger, which at the same time carries the drill. By this arrangement it is possible

makes about 400 strokes per minute. The length of feed is thirty inches.

GATES IRON WORKS.

The Gates Iron Works, of Chicago, occupy about 1000 square feet of floor space and make a very interesting exhibit. A prominent feature is the large Gates crusher, No. 7½. The frame on which this machine rests is made of heavy cast iron. The countershaft bearings are of brass, made interchangeable top and bottom and endwise, and are of unusual length. The adjustment for reducing or increasing the size of the product is vertical. The crushing head is raised three or four inches above the bottom of the concaves to give it the greatest opening, and is lowered to decrease the size of the opening. The system of leverages, which has been found by experience to be efficient in the Gates rock and ore-breaker series, has been preserved in this machine. The safety brake-pin device is also retained, as well as the straight bearing at the top of the vertical shaft, both of which features

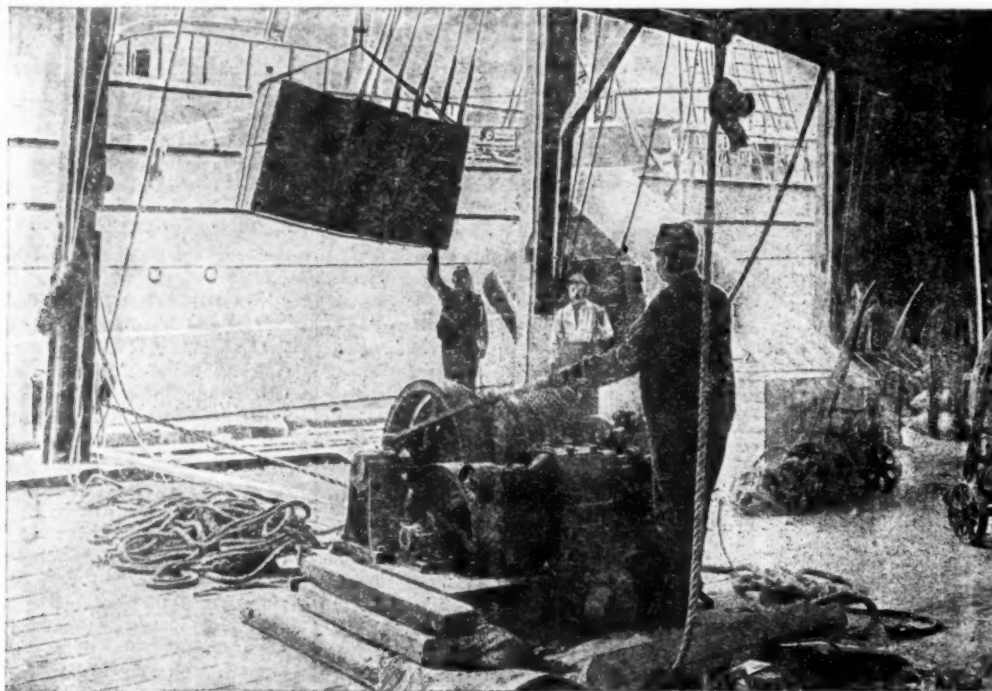
the trend of opinion is now diametrically opposite. The owners would not be without them, and the men are so convinced of their many superior features that any proposal to return to steam hoists would arouse an active protest, if not cause actual strike. The hoists have so completely accom-

exhibits at the World's Fair, located as follows: Machinery building, section 26, main, column K, 30; section S W, outside, south of machinery building; agricultural annex, E M, 11, south end, east centre; wind-mill exhibit outside. At their exhibit in the machinery hall their repre-

many cases are greatly to be preferred to the latter type. Each style, however, has its use and advantage, and its choice between them must depend upon the situation and the nature of the work to be performed.

The builders of the "balanced gate" wheel include in their output not only

balanced gate draft. This is a very simple device by which the power applied to open and close the gate is distributed in equal amounts to two opposite sides of the ring, thus eliminating all side draft and preventing the heavy friction between it and the curb that would otherwise occur. The principle involved may be illustrated by supposing two deep rings of about two or



ELECTRIC HOISTING WINCH FOR STEVEDORE WORK.

plished every duty they have been called upon to perform that the installing company has yet to hear the first complaint against them. They are readily moved from place to place on the wharves or upon the vessels themselves whenever they may be needed, require little or no attention and are made ready for service by the mere connection of the conductors to the service wires.

Perhaps the most important feature emphasizing the superiority of these electric hoists over their predecessor, the steam-hoisting engine, is that of repairs. During the two and a-half years in which these hoists have been under continual daily duty the total cost of repairs amounted to the phenomenal sum of \$24.75, or \$2.75 average for each hoist. It may be doubted whether any such fact as this has ever been recorded about a steam hoist.

This installation is by no means exceptional. Electric hoists are superseding the steam hoist, not only in marine and wharf work, but in factories, mines, engine shops and other places where economy, rapidity of work and perfect operation is requisite.

A New Well-Drilling Rig.

We illustrate herewith a new portable well-drilling machine that is just being introduced by the American Well Works, of Aurora, Ill. It is suitable for the largest range of work with the least amount of changing or combination. These machines are built with engine and boiler on the same truck, as shown in the illustration, or separately, if necessary, and unmounted or to be operated by horse-power or combined horse and steam-power, and by simple changes can be used with marked success in penetrating the different formations met in the most difficult localities. They work equally well with the hollow rods and tools, pole tools or cable tools, according to the formations the styles are best adapted to.

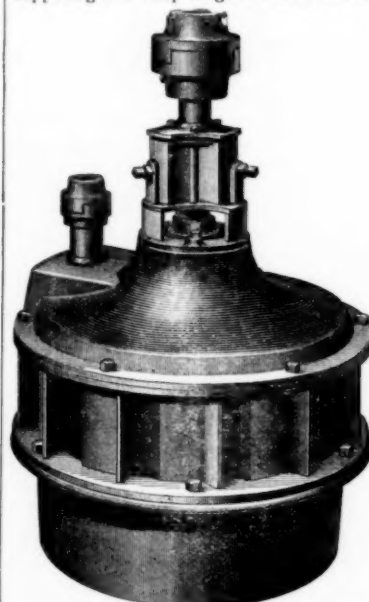
The manufacturers of these machines also build all styles of steam and wind-mill pumping appliances in connection with the well-sinking trade, and can give practical advice about the tools and machinery to be used if the character of the work be fully outlined. The have four

sentative can always be found in charge, willing to give information or to quote prices on special machines.

Balanced Gate Turbine Water-Wheel.

The turbine water-wheel herewith illustrated is only one of the various styles

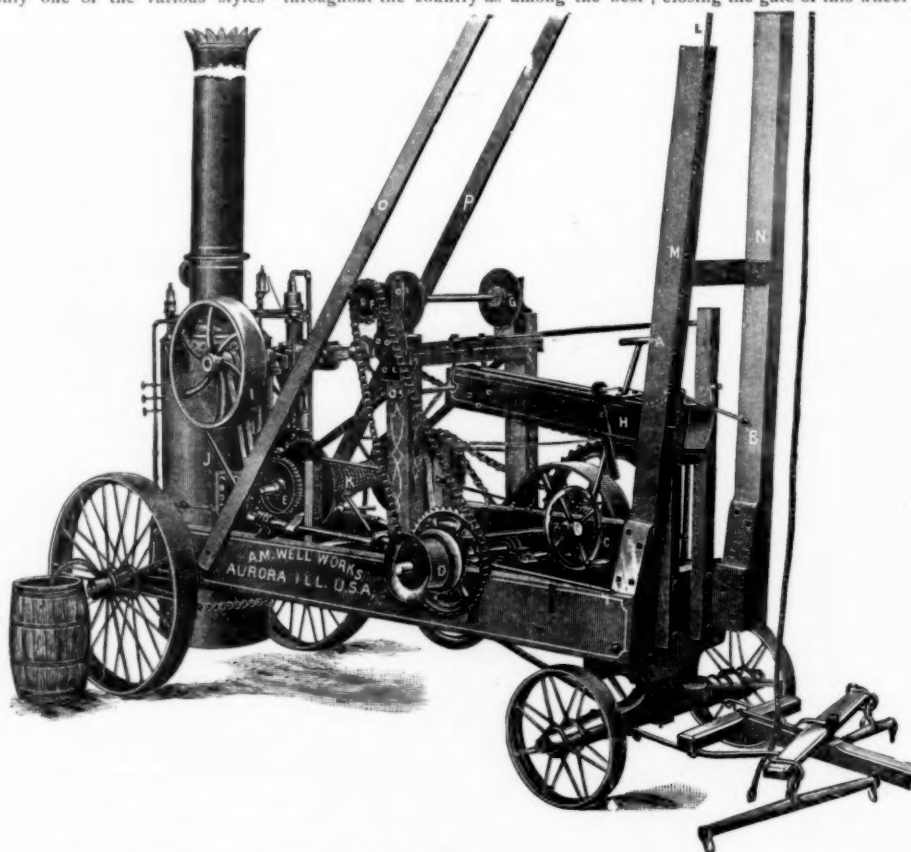
vertical wheels for wood penstocks and in globe and cylinder casings, but also single and double horizontal wheels, both for wood and iron flumes, and in sizes ranging from eight inches to six feet or more in diameter. These wheels are well known throughout the country as among the best



BALANCED GATE TURBINE WATER-WHEEL.

three feet diameter being fitted one within the other, the one to be moved resting upon a projecting flange and having two handles extending from its upper edge at opposite points. Now, in attempting to rotate this ring one will find it moves much easier if he pulls with one hand and pushes with the other with equal force than if he moves it by one handle only.

The mechanism used in opening and closing the gate of this wheel operates pre-



A NEW WELL-DRILLING RIG.

built by the Christiana Machine Co., of Christiana, Pa., and adapted to the different situations and purposes for which water-wheels are now so extensively used.

Horizontal wheels, especially when used in pairs on the same shaft, are now universally conceded to be equal in economy of power to the vertical wheels, and in

on the market. Their simplicity and durability is unquestioned, and they are claimed to yield a high percentage of power well maintained at part gate.

The illustration shows a vertical wheel for wood penstock having an inside register gate ring. The distinguishing feature of this wheel is the patent self-adjusting

cisely on this principle, but with more certainty and accuracy in the equalization of the force applied. The construction of the device is such as not to be affected in its operation by irregularities in the fitting up (if any occur) or by any possible amount of wear. A more minute description of this feature of the wheel is given in the

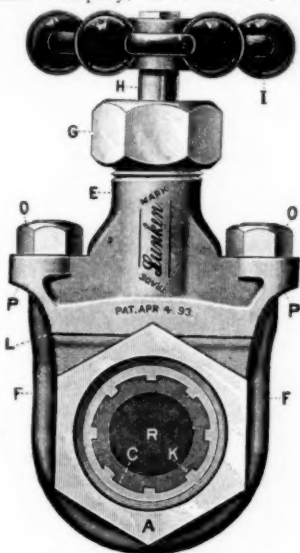
catalogue published by the builders.

A modified form of this gate gear is used with wheels on horizontal shafts, being applied with equal efficiency in this case to an outside register gate. In the ease of movement thus acquired in connection with close-fitting gates a superiority is claimed for these wheels over all others of their class.

The "Lunken" Gate Valve.

It is well known by all intelligent steam users that the ordinary globe valve, on account of its crooked and cramped passage, is a very imperfect valve, causing a loss through resistance that is enormous. Users of valves are beginning to realize this fact, which accounts for the increased use of straightway or gate valves. The commonly-called globe valve in this age of progress ought to be classed among the antiquities. There is today not a valve in the market (either globe or gate) in which the seat is practically renewable, which fact necessitates the renewal of the complete valve in case the seat becomes cut or much worn. Why should a valve shell when once in place not last as long as the pipes connected thereto? Why should the parts that wear (seat and disk) not be easily renewed?

To meet these requirements the Lunkenheimer Company, of Cincinnati, Ohio,

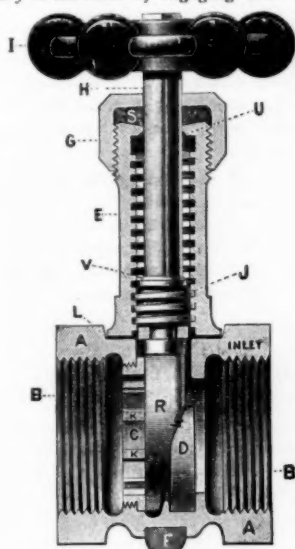


"LUNKEN" GATE VALVE.

whose many specialties are known to all steam users, will shortly add to their popular specialties the "Lunken" gate valve, which will excite much interest among valve users. It has every indication, even judging from a most conservative standpoint, of becoming a universal standard, correcting as it does the many existing imperfections and possessing several important improvements over valves now used. It is an almost complete departure from the usual pattern, being more simple, compact and durable than even a common globe valve, although possessing the advantage of being a straightway valve. To get an idea of the compactness of this valve it is worthy of mention that a one-inch valve, warranted to stand fully 150 pounds working pressure, weighs three-quarters of a pound less than the lightest one-inch common globe valve in the market.

Referring to the illustrations it will be seen that the valve is unique and neat in appearance and of a construction that would indicate great strength. The hub or bonnet is held to the shell by a coppered steel clip or strap surrounding the shell with its ends passing through the ears of the bonnet and secured by nuts O. This clip is held from lateral movement by projections on the shell. The joint is packed by a hard lead washer of one-sixty-fourth inch in thickness, the top faces of flanges each having a groove to properly secure the washer. The valve can easily be taken

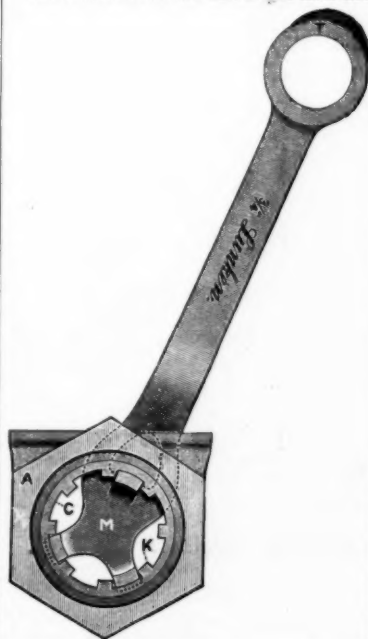
apart without renewing the packing washer. The hub or bonnet is flat and narrow and just of sufficient size to receive within it the valve disk when entirely raised, and has sectional or part-nut threads in its opposite interior sides. The threaded portion J of the stem by engaging with these



"LUNKEN" GATE VALVE—SECTIONAL VIEW.

part threads causes the valve to be opened or closed. The disk has a straight, flat face or bearing against the renewable seat C, and is forced tightly against same by the self-adjusting wedging half-ring or horse-shoe D, secured loosely in the valve shell. The wedging on the disk is applied on two wedging surfaces, diametrically opposite each other, these coming in contact with the beveled ends of the half-ring or horse-shoe wedge; thus the wedging is properly equalized on the entire disk and insures a tight joint on the opposite face. The pressure of the steam or liquid on the back or wedge side of disk also aids to make a tight-closing valve.

All valves above two and a-half inch size



REMOVING WORN SEAT FROM "LUNKEN" GATE VALVE.

are provided with by-pass, which arrangement balances the disk before opening same, and thus reduces the friction and wear on seat and disk to a minimum, and makes the valve open easily regardless of what heavy pressure may be on same. This automatic by-pass attachment is an all important improvement. The by-pass, briefly explained, is an auxiliary valve formed in the top of the valve disk immediately below the yoke that secures same to the flanged head of the stem H, and is operated by the stem of valve automatically while opening or closing

the main valve. Channel N, passing through the disk, connects the inlet or pressure side of the valve with the outlet side, and the end of the stem H controls this channel, there being sufficient play in the disk coupling to allow the complete opening of channel N caused by the first one-sixth turn of the wheel in opening the valve.

The renewable seat, it will be seen by referring to the cuts, is an exteriorly threaded flanged ring that screws against a face or shoulder of the flange, the opposite side of which flange forms the seat or bearing surface for the disk to close against. The inner periphery of the ring has lugs or



RENEWABLE SEAT OF "LUNKEN" GATE VALVE.

teeth K for the engagement of the wrench M, by which means, after taking off the bonnet E, the seat is operated, and either taken out or put in through the disk opening of the body without disturbing the pipe connections. In iron body valves the renewable seat C screws into a second brass ring permanently fastened in the iron shell, otherwise, owing to the rusting qualities of iron, the renewable seat might rust tight in the shell. The ring end T of wrench is used to hold and guide the removable seat into place, so as to properly start its threads into the threads in the shell.

Thus, to renew the seat in a valve it is necessary to proceed as follows: Take off the bonnet, loosen the seat with the spanner end M of wrench, engaging the lugs on interior periphery of seat; then unscrew and take out seat; then place the new seat on the ring end T of the wrench and insert into valve, holding the wrench in one hand



BY-PASS IN "LUNKEN" GATE VALVE.

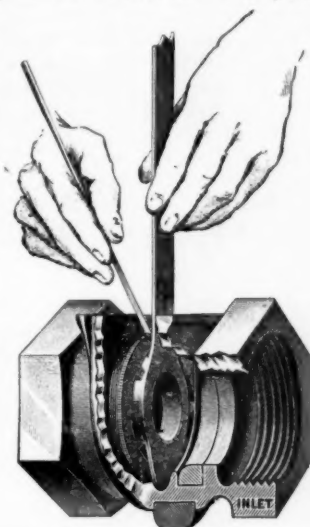
to hold and guide the new seat into place, while with the use of a knife or pointed tool in the other hand the seat, which is knurled or milled on its outer edge, is turned and started into its threads. When properly started and screwed down the other end of wrench (spanner end M) is applied to tighten the seat firmly. Thus in a few minutes and with perfect ease any person can practically make a worn-out "Lunken" gate valve as good as new, the cost of the renewable seat or a new disk being but trifling.

Another important feature is that the stem, when valve is full open, seats itself (V against U), thus relieving all pressure on stuffing-box and permitting repacking of same under pressure. The tie-band surrounding the shell adds greatly to the strength of the entire valve and permits of its being taken apart easily with a small wrench. The shell is so short and rigid, and the wedging surfaces are so small, that expansion and contraction do not affect it. Thus the disk will never wedge fast and become inoperative, which is the

case with many styles of double-seated gate valves. Having but a single disk, and the wedging half-ring taking the place of a second disk, as a wedging resistance this construction overcomes the objection in double disk gate valves, where liquids remain in the shell between the disks and often freeze or injure the valve. It is impossible for anything to lodge on the seat of this valve, because the disk and seat have a parallel straight face, and as the pressure on the back of disk keeps it tightly pressed against its seat, it actually cuts away, like the action of the blades of a pair of shears, anything in its path. This feature, combined with the renewable seat, commends this valve for blow-off purposes.

As regards outside finish, the shape and construction are such that necessitates only the finishing of the stuffing-box, the balance being left a smooth casting, while the steel band and nuts are drop-forged and nicely copper-plated to prevent rust.

This ingenious and simple valve is the invention of Mr. Edm. H. Lunke, whose reputation as an inventor is already estab-



INSERTING NEW SEAT IN "LUNKEN" GATE VALVE.

lished, being the inventor of all the celebrated specialties manufactured by the Lunkenheimer Company, of Cincinnati, Ohio. This company is arranging, with the assistance of several other prominent manufacturing firms, to produce these valves on a large scale, so that they can be speedily and properly supplied to the trade generally and at a price that will warrant general adoption. Propositions and investigation of manufacturers interested for American or foreign rights are solicited. The Lunkenheimer Company, of Cincinnati, after having experimented with and tested valves for the past six months on pressure exceeding 150 pounds, is now busily at work getting out valves in brass from one-quarter inch to three inches, and iron with screwed ends from two inches to twelve inches, and expects in a few weeks to be ready to take orders.

It is worthy of mention that this company has a large exhibit at the World's Fair in machinery hall, section 25, column O, 24, with a complete display of their specialties, where visitors can also see samples of the "Lunken" gate valve.

Cotton Sales at Macon.

Advices from Macon, Ga., are to the effect that over \$65,000 worth of old crop cotton has been sold in two weeks. The indications are favorable for a brisk demand for the new crop, as there is less old cotton in the warehouses of Macon now than there has ever been in the history of the city in August. The total amount of old cotton on hand is but 836 bales.

THE shipments of the Pocahontas Coal Co. for the month of July were 219,853 tons.

There has been a fairly active business in the lumber market during the past week, and, notwithstanding the depression in

financial circles at Northern and Eastern points, there is a good demand from these sources. Trade, however, is not active, and in local circles the demand for building purposes has not improved. There is a fair business doing in crossties, and there is a steady demand from trunk lines in the North. A cargo of 12,038 crossties was cleared for New York this week measuring 501,280 feet, also 891,642 feet of lumber to the same port. Other shipments consisted of 11,403 feet to Boston, 138,587 feet to Philadelphia and 632,060 feet to Baltimore; total shipments 2,174,972 feet. The reports from the interior are not encouraging, and many mills are inquiring for orders. We quote prices of lumber as steady, with no material change in the general list of values. Easy sizes \$11.25, ordinary sizes \$12.00 to \$16.50, difficult sizes \$13.00 to \$25.00, flooring boards \$14.50 to \$22.00 and shipstuffs \$16.50 to \$25.00. Lumber freights are weak for sailers, while there is very little demand for vessels at the moment. Foreign business is more or less nominal. The rates from this and nearby ports in Georgia are quoted at \$4.50 to \$5.25 for a range including Baltimore and Portland, Me. Railroad ties basis of forty-four feet sixteen and a-half cents. To the West Indies and Windward rates are nominal, to Rosario \$14.00 to \$15.00, to Buenos Ayres or Montevideo \$12.00 to \$12.50, to Rio Janeiro \$13.50 and to Spanish and Mediterranean ports \$11.00 to \$11.50. Steamers to New York and Philadelphia are quoted \$7.00, to Boston \$8.00 and to Baltimore \$5.50.

Mobile.

[From our own Correspondent.]

MOBILE, ALA., August 8.

The timber trade of this port at present is very dull and only a few days remain before the season closes. Freights are very firm and high just now, and a number of timber contracts are being made for fall and winter delivery at about the same prices ruling last year. Hewn timber placed upon the market would bring about nine cents per cubic foot for 100 feet average and classing B1 good. The exports for the week were 41,490 cubic feet for Bordeaux. Since September 1, 1892, the shipments amount to 2,425,312 cubic feet, against 2,766,057 cubic feet the same period in 1891-92. Sawn timber is quoted eight to nine cents per cubic foot, basis 40-foot average. The weekly exports were 26,389 cubic feet, and since September 1, 1892, they amount to 2,862,829 cubic feet, against 2,004,340 cubic feet last year. The business in lumber continues in better volume and there is a good demand for all well-manufactured stuff of desirable dimensions. The shipments of the week were well distributed, and, while not large, shows that the demand is steady from European and South American ports and Mexico. The exports amounted to only 1,002,360 superficial feet, and since September 1, 1892, they aggregate 73,874,941 feet, against 56,754,829 for the same period in 1891-92. The shingle trade continues dull, with no demand of any importance and stocks unusually large, with prices ruling easy.

Beaumont.

BEAUMONT, TEXAS, August 7.

The outlook for the lumber industry in this section may be considered rather promising than otherwise. It is true that, under the present state of monetary affairs throughout the country, collections have been somewhat slow, but millmen have been liberal in giving extensions. Crop reports are on all sides very encouraging, and this, coupled with the depleted stocks of lumber in the interior, gives promise that there will be an active demand for lumber in the early fall from every direction. The Beaumont Journal of the 5th inst., in reviewing the lumber market, says: "The market is rather quiet; still it preserves a

healthy tone, and confidence is expressed that general business will improve within the next thirty days, and with the revival will come a good demand for lumber. Orders from dealers, while not numerous or for large quantities, continue to come to hand in fair numbers. There are still some saw bills among the mills, and other estimates are out for bids. Collections have been rather slow and millmen have been liberal in making extensions, dealers generally throughout the State being regarded as in good condition." The shingle market is quiet and the demand very light, with prices weak. Among the transactions of the week may be mentioned the contract for 36,000 crossties and a large quantity of timber, the whole aggregating 1,500,000 feet, for a railroad to be built by Cunningham & Miller from Sugarland to Arcola, where it will connect with the Santa Fe and International & Great Northern roads. At other points in southeastern Texas the lumber trade is holding its own, and while some of the mills have shut down, they are all undergoing repairs, and are likely to resume at any time. At Orange the Litcher & Moore Lumber Co. is running right along, and on the Sabine & East Texas road all mills are running except that of the Summit Lumber Co., operated by a receiver. Business continues fairly good, and the hope of an early revival of trade keeps most of the mills operating as usual.

COTTON MARKET.

NEW ORLEANS, LA., August 7.

Editor Manufacturers' Record:

As we have stated in several of our previous letters, the then apparent strength of cotton was almost, if not wholly, of a negative character. This view has in a measure been confirmed, as the new crop has barely commenced to move and we already see indications of weakness. So long as there was no immediate demand for money to market it and no speculative inclination to sell it cotton alone enjoyed a peculiar immunity from the depressing financial conditions which so seriously affected the values of all other staple commodities. With the crop movement just inaugurated and prices already sensitive to the probable scarcity of currency the outlook is not promising. To what further extent prices may be affected, especially in the near future, depends more largely on the volume of receipts than on good or bad crop advices. Unless there is a greatly improved demand the pressure to sell on an already hesitating market would likely bring about a material decline.

Crop advices, except from Georgia and the Carolinas, are fairly favorable. Texas has been visited with a generous rainfall, and those portions of the State from which the complaints were most pronounced have participated in its benefits. The financial crisis which almost amounts to a panic is wholly of a monied character and is really outside of legitimate business. The crops of the country have been abundant, and the distrust engendered by the collapse of fictitious values is alone the cause of present conditions. Any legislation which would tend to restore confidence would have a beneficial influence on trade; while, on the other hand, any attempt to identify the silver question with sectional or party lines would aggravate the already nervous feeling and might lead to serious consequences. The situation is a delicate and complex one, and the proceedings of Congress will be watched with great interest.

The world's visible supply of cotton is not such as would warrant the expectation of any advance of moment, and any early improvement must be resultant from restored financial confidence, as accumulated stocks, the closing of mills, tight money and cautious buyers are the depressing ele-

ments which must be overcome before there is any trade activity. The world's visible supply of American on Saturday last was 2,031,000 bales, against 2,099,000 the Saturday previous and 2,388,000 last year. Of this, Liverpool had on hand and afloat 1,056,000 bales of American, against 1,259,000 last year. American ports had 286,000, against 440,000 last year. American interior stocks were 91,000, against 152,000 last year, and Continental stocks were 624,000, against 557,000 last year.

The weight, therefore, is in Europe, and, owing to the depression among New England spinners, no assistance can be expected from that quarter, and but little can be looked for from a country that is as largely stocked as they are on the other side, at least in the way of visible supply. On July 1 Ellison, the English authority on consumption, made European spinners' stock only 190,000 bales less than last year. These are formidable figures to be entering a new season with the prospect of a crop anything over 7,000,000 for the ensuing year.

ATWOOD VIOLETT & CO.

CLOSING PRICES OF COTTON FUTURES AUG. 9.

Months.	New Orleans.	New York.	Liverpool.
August.....	7.18	7.48	4 20-64
September.....	7.19	7.53	4 18-64
October.....	7.27	7.61	4 19-64
November.....	7.37	7.74	4 20-64
December.....	7.47	7.84	4 22-64
January.....	7.63	7.93	4 23-64
February.....	7.72	8.03	4 24-64
March.....	7.80	8.12	4 26-64
April.....	4 27-64
May.....
Tone of market.	Quiet.	Very steady.	Irregular.

CLOSING PRICES OF SPOT COTTON AUG. 9.

Grade.	New Orleans.	New York.	Liverpool.
Middling.....	7	7 3/4	4 7-16
Low middling.....	6 11-16	7 1/16	4 5-16
Good ordinary.....	6 11-16	6 5/8	4 3-16
Tone of market.	Dull and nominal.	Quiet.	Fairly active and easy.

Southern Textile Notes.

THE Charlotte Cotton Mills, of Charlotte, N. C., commenced work on the 2d inst. after three weeks' cessation. The mill will, however, run on only half time. The weaving department, which occupies the new addition, will not run until September. One hundred and forty-four looms are in the mill.

THE Myrton Hosiery Mill, of Charlotte, N. C., will likely shut down for several weeks. Mr. R. M. Oates, Jr., is in New York now trying to sell off the stock.

THE gingham mill at Chester, S. C., underwent a reorganization on the 3d inst. Messrs. Dunnivant and Lathan retired from the presidency and treasurerhip, respectively, and were succeeded by Mr. S. M. Jones as president and treasurer.

THE King Mills at Augusta, Ga., recently made one of the largest shipments ever sent out of Augusta. It consisted of 250 bales of cotton goods, which were sent to the North and points in the South. The goods are valued at \$50.00 a bale, which amounted to the sum of \$12,500 as the gross result of the day's shipment.

MESSRS. GEORGE H. MCFADDEN & BRO., of Philadelphia, and Liverpool, England, who have purchased the cotton compress at Taylor, Texas, have appointed Mr. A. H. Murray, of Hillsboro, Texas, superintendent and general manager. The compress will begin active operations the 15th.

THE Huguenot Plaid Mill, of Greenville, S. C., decided on the first of the month to run on short time for a month or more. Since that decision was made the outlook for placing the goods of the company has very much improved, and the mill will now run on full time until the first of September, and if there is no change for the worse in the market at that date will continue running full time.

TRADE NOTES.

THE Foster Machine Co., Westfield, Mass., will close its works the 17th of August for ten days to make needed and extensive repairs on the dam.

THE Ehret-Warren Manufacturing Co., after a successful business career of forty-five years, has been succeeded by S. E. Barrett Manufacturing Co., an equally old and reliable firm, and in future will be known as S. E. Barrett Manufacturing Co., with offices at 113 N. Eighth street; factory, Levee and Convent streets, St. Louis, Mo.

It will be of interest to Americans to learn that Worthington pumping engines are to be used for the water supply of the city of Osaka, Japan. By the placing of this order there is literally a "girdle 'round the earth" of Worthington pumping engines, these machines having worked their way as far east as China up to the time of the awarding of this last contract.

THE city engineer of Boston, having used one of the Providence patent steam capstans made by the American Ship Windlass Co., on the Warren drawbridge, for hauling vessels through the draw, writes to the company as follows: "In answer to yours of the 4th inst., I would say that the steam capstan furnished by you for our new Warren bridge has given perfect satisfaction."

THE Berlin Iron Bridge Co., of East Berlin, Conn., has received the contract for the new power station for the Atlantic Improvement Co., Astoria, L. I. There will be two buildings, a boiler-house sixty-two feet wide and eighty-five feet long, with a dynamo-room seventy feet wide and 130 feet long. The dynamo-room is controlled by a traveling crane to be furnished by the same parties.

JOHN C. N. GUIBERT, patentee and manufacturer, 115 Broadway, New York, of the swinging hose-rack, has been awarded the contract for supplying United States buildings, east of the Rocky mountains, under the supervision of the Treasury Department, Washington, nickel-plated swinging hose-racks, to be used in connection with interior hose equipment, from time to time as may be required, during the fiscal year ending June 30, 1894.

WE learn from the local papers that the Henry Martin Brick Machine Manufacturing Co., Lancaster, Pa., has secured an order for brick machines to go as soon as possible to South America. The order came through the firm of W. R. Grace & Co., of New York, and is one of the largest ever filled by the Martin Company. The placing of this order, after an extended examination of the machinery made by many American concerns, is a high compliment to the Martin machines.

JAMES WARRBURTON, Pittsburg, a well-known heater in Shoenberger & Co.'s Ashtabula rolling mill, after a thorough test of the Frazier fuel gas in a large furnace heating steel, says: "I have been employed nearly thirty years in rolling mills in England and America. In all my experience I have never used or come across so satisfactory a fuel as is produced by the Frazier generator. The gas burns in the furnace with a soft, white heat, free from smoke and deposit of carbon."

THE Roanoke Roofing & Metal Cornice Co., Roanoke, Va., is now at work on the following contracts: Pepper-Buxton business block at Winston, N. C., copper and galvanized iron trimmings, tin roof, slate tower and skylights; Bladen county courthouse, Elizabethtown, N. C., slate roof, terra-cotta tower, galvanized iron trimmings; Masonic Temple, Bramwell, W. Va., galvanized iron trimmings; Day business block, Roanoke, Va., galvanized iron trimmings; business house for Mr. C. Markley, Roanoke, Va., galvanized iron trimmings.

E. S. SMITH, of Columbia, Pa., informs us that he has just received an order for fifty of his metric sliding calipers and six of his 25-mm. micrometers from Gillis & Gleason, 106 Sudbury street, Boston, who introduce these goods in technical schools, colleges, etc. The Pacific Tool & Supply Co., San Francisco, Cal., has taken the Pacific coast agency for Mr. Smith's fine measuring tools, and these specialties will also be kept in stock by the Plumb Hardware Co., of Bridgeport, Conn., and Wm. P. Walters & Sons, 1223 Market street, Philadelphia, Pa.

THE sale of the equipment of the Bridesburg Machine Works, of Philadelphia, announcement of which is made in our advertising columns, is an event of interest in the textile machinery trade, as this will be an opportunity to buy at a small fraction of the original cost patterns for valuable textile machinery that has competed successfully with the best makers of similar machinery now upon the market. The Bridesburg machinery is in general use throughout the country, and the patterns consequently possess a special value for the supply of repair parts, for which there is a large demand. The patterns for each machine will be sold as a separate lot.

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

* Means machinery is wanted, particulars of which will be found in "Machinery Wanted" columns.

In correspondence relating to matters reported in this paper, it will be a favor if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ALABAMA.

Birmingham—Factory Enlargement.—The Birmingham Paint, Oil & Roofing Co. will make an addition to its works for grinding dry paints. It will secure ores from beds near Birmingham.

Florence—Blast Furnace.—The Sphatite Iron Co.'s blast furnace is undergoing repairs and alterations. As soon as these are completed fires will be lighted.

Greenville—Canning Factory.—It is stated that preparations are being made to erect a canning factory at Greenville and to furnish it with appliances for packing all kinds of fruit.

Huntsville—Bridge.—A street bridge is to be erected in Huntsville. The mayor may be addressed.

Huntsville—Sewer system.—The city has decided to introduce a sewerage system, and has engaged an engineer to furnish plans and specifications. Huntsville is a city of 8000 people. The mayor may be addressed.

ARKANSAS.

Camden—Manufacturing Company.—The Ouachita Manufacturing Co. has been incorporated with a capital of \$65,000 by S. C. Tyler, W. H. Wilmot and others.

Little Rock—Chair Factory.—The Commercial League is making efforts to secure a chair factory at Little Rock.

Little Rock—Stave Factory.—Efforts are being made to secure the stave factory now located at Beebe, Ark. A committee of the Commercial League is securing a site for the plant.

Little Rock—Bridge.—The county will solicit bids for building a free bridge across the Arkansas river at Little Rock. It will be an elaborate structure, and its probable cost is estimated at \$300,000.

Pine Bluff—Car Shops.—Work on the car shops of the Cotton Belt Railway system has begun. They will contain over 1,000,000 bricks and be fully equipped with appliances for railway car construction. A large steam plant will furnish power. The superintendent at Pine Bluff may be addressed.

FLORIDA.

Bartow—Planing Mill, etc.—L. N. Milam's additions to his planing-mill outfit include bits for planing and molding machines, an emery-wheel stand and two wheels, a turning lathe and a band saw.

Fernandina—Woodworking Plant.—C. B. & R. D. McNair have purchased the Durjee woodworking plant and will manufacture newel posts and interior woodwork of all kinds.

Inverness—Phosphate Mines.—J. R. Biggs & Co. will begin work at their phosphate mines near Inverness about October 1. They will begin putting in machinery in a few weeks.

Key West—Ice-machine Plant.—Scott, Curry & Co. are erecting an ice-machine plant. The building is 32x70 feet and will be equipped with modern apparatus. The machinery has been purchased.

Palatka—Mill Improvements.—The Wilson Cypress Co. will change the location of its boiler plant and add two cylinder boilers to its battery. A new saw carriage will be put in.

Palatka—Planing Mill and Factory.—It is stated that N. J. Tilghman & Sons are arranging to erect a large planing mill, with a sash, door and blind factory in connection. The plant will be fitted with the latest appliances in woodworking machinery.

GEORGIA.

Atlanta—Nursery Company.—The Brookwood Floral Co. has been incorporated with \$15,000 capital by Robert Lowry and others for the purpose of planting and cultivating trees, shrubs, etc.

Augusta—Cotton-mills Enlargement.—The Langley Manufacturing Co. is completing an addition to its cotton mills which will double their capacity. A complete outfit of machinery, which will be operated by 350 hands, is to be put in.

La Grange—Canning Factory.—A project is on foot to establish a canning factory for preserving fruits and vegetables grown in the vicinity of La Grange. The plant will be large enough to pack 15,000 cans per day.

Lost Mountain—Gold Mine.—T. S. McDaniel writes that work has begun in the Kemp gold mine near Lost Mountain. Two shafts have been sunk and preparations are being made to take out the ore.

Macon—Crematory.—A company is being organized with \$10,000 capital to build a crematory in the suburbs of the city. The building will be provided with a furnace and probably a room for holding religious services.

Milledgeville—Bridge.—The Milledgeville & Asylum Railroad Co. will build an iron bridge across Fishing creek.

Thomaston—Bridge.—The county commissioners have decided to erect a new bridge across the Flint river and will have plans, etc., prepared in a short time. Address the town clerk.

KENTUCKY.

Falmouth—Flour Mill.—The machinery outfit for R. E. McDonald's flour mill is being put in, and it is expected the mill will be in operation by September 1. The machinery contains many new improvements.

Lexington—Street Paving.—The city council is considering the idea of paving a number of the principal streets with brick suitable for that purpose.

LOUISIANA.

Crowley—Rice Mill.—The rice mill noted in our last issue is now controlled by the Star Rice Milling Co., which is making improvements to buildings and machinery.

New Orleans—Paving.—Granolithic, asphalt and gravel pavements will be laid in a number of streets by resolution of the city council. The city engineer may be addressed.

New Orleans—Sewerage System.—The New Orleans Sewerage Co. has obtained a franchise to construct an extensive sewer system and will receive bids for work. The company or the city clerk will give information.

Rayne—Rice Mill.—The Acadia rice mill is being repaired and put in readiness for working on the new crop. The facilities for milling rice will be increased.

Shreveport—Levee Bids.—The Caddo levee board will receive bids until September 5 for constructing the Eagle Bend, Kentucky, Ferryfield, Cash and Pascagoula levees. The board will further inform inquirers.

MARYLAND.

Arlington—Bridge.—A bridge will be built over Gwynn's falls on Gwynn Oak avenue. W. E. Huffer, Arlington, may be addressed.

Baltimore—Clasp Factory.—The Perfect Clasp Co. has been incorporated by Maurice Laupheimer, Robert Austrian and others to manufacture garment clasps under a special patent. The capital is \$20,000.

Baltimore—Kaolin Manufacturing, etc.—Richard B. Power, Arthur F. Spice and others have incorporated the Maryland Clay Co. for the purpose of manufacturing compounds of clay, sand, kaolin, etc. The capital is \$10,000.

Cumberland—Bridge.—The Baltimore & Cumberland Railroad Co. will build a bridge across the Potomac river near Cumberland. Address the chief engineer at Cumberland.

Kent County—Bridge.—A stone-arch bridge is to be constructed across the Sassafras river in Kent county. Address board of county commissioners at Chestertown.

Lapidum—Canning Factory.—Spencer & McGonigle have equipped a large building with an outfit of machinery for packing corn and tomatoes and will begin operations in a few days.

Mount Wilson—Water Works.—It is reported that James B. Councilman has contracted for a water-works system to be constructed at Mount Wilson on a tract of land he is laying out for a village.

Northeast—Electric-light Plant.—The town authorities are considering the idea of putting in an electric-light plant. Address the town clerk.

Washington, D. C.—Printing Office.—The Colored-American Publishing Co. will make a specialty of publishing papers, books, etc., by colored authors and will equip its plant with a full outfit of newspaper and job type, etc. E. E. Cooper may be addressed.

MISSISSIPPI.

Natchez—Cotton Gin.—Dreyfus Bros. have purchased the O'Ferrall cotton-gin plant, and, it is stated, will enlarge it and increase its facilities for production.

Natchez—Wagon Factory.—It is understood that Dreyfus Bros. contemplate establishing a wagon factory at Natchez and putting it in operation as soon as possible.

MISSOURI.

Aurora—Furniture Factory.—Stock is being subscribed towards a furniture factory to be erected at Aurora, with all the necessary woodworking machinery, etc.

Bomer Mills—Lead Mine.—E. G. Elliott has purchased forty acres of land in Lawrence county. He will open several lead mines on this tract. Prospecting shafts are to be sunk at once.

Joplin—Lead Mines.—The Minneapolis Mining Co. is preparing to equip its mining claim with a complete steam plant. It is receiving bids for the necessary machinery.

Joplin—Lead Mines.—The Vernon Mining Co. is considering the idea of erecting a steam mining plant on its land, as large deposits of ore have been reached.

Joplin—Lead Mine.—The Herold Mining Co. is preparing to open a new lead mine. It has found a rich deposit in what is known as the Conner tract.

Joplin—Lead Mines.—The Wyandotte Mining Co. is sinking eight prospecting shafts on its territory and will work them with the necessary machinery if lead is found in paying quantities.

St. Aubert's—Roundhouse, etc.—It is reported that the Missouri, Kansas & Eastern Railroad Co. will build a roundhouse and repair shops on a site which the company has bought near St. Aubert's.

NORTH CAROLINA.

Cumberland County—Iron Bridges.—The county of Cumberland wishes to purchase some six or eight iron bridges for county roads; would not object to using second-hand bridges laid aside by railroad companies if these are suitable. Address W. C. Troy, chairman, Fayetteville, N. C.

Durham—Cotton Mill.—The machinery for the Pearl Cotton Mill is being put in and the plant will be ready for operation in a short time.

Gold Hill—Gold Mine.—The Gold Nugget Co., of New York, it is stated, has purchased the Biggers gold mine in Cabarrus county and will use the placer mining system on an extensive scale in developing it. A. C. Mauney, of Gold Hill, is interested.

Ramsey—Cotton Mill.—The Columbia Manufacturing Co. has begun the erection of an additional cotton mill at its plant on the Deep river. It is also building a new lapper-house in connection with the mill.

Rowan County—Mining and Lumber.—The Atlas Mining & Lumber Co. has been incorporated at Newark, N. J., to carry on mining and lumbering in Rowan county. Its capital is given as \$1,000,000.

Salisbury—Filter Factory.—The Morgan Filter Co., it is stated, is preparing to increase the capacity of its plant and will add to its buildings.

Shelby.—The roller flour mill erected by E. Blanton has machinery for grinding thirty barrels per day.

Winston—Tobacco Factory.—The Hanes tobacco factory recently destroyed by fire will be rebuilt at once and equipped with the machinery, etc., necessary for its operation. The contract for the building has been let.

SOUTH CAROLINA.

Abbeville—Railway Shops.—Work has been commenced on the buildings for the Georgia, Carolina & Northern Railroad repair shops, etc. A complete equipment for making car and locomotive repairs will be placed in the plant. Address the superintendent.

Batesburg—Cotton Mill.—S. Bounds, of Florence, Ala., will construct the cotton mill to be built at Batesburg. It will cost \$10,000 and be equipped with a full outfit of the latest improved machinery. The Batesburg Cotton Co. may be addressed.

Charleston—Bridge.—Steps are being taken for a bridge across what is known as Wappoo Cut. Henry Pregnall may be addressed.

Ninety-Six—Oil Mill.—The Ninety-Six Oil Mill Co. has bought the plant of the Ninety-Six Manufacturing Co. and will operate it instead of erecting a new mill.

Union—Cotton Mill.—The cotton mill now being

erected will be equipped with improved machinery and will be operated by steam-power. It is to be completed as soon as possible.

TENNESSEE.

Chattanooga—Bridge.—The Chattanooga Company is preparing specifications for the proposed steel bridge over the Tennessee river. It will probably be constructed for railway trains and wagons.

Erwin—Canning Factory.—R. R. Emmert is interested in a projected canning factory which it is proposed to build in Erwin in time to pack next year's crop.

Harriman—Coffin Factory.—A. V. Ball has established a plant for the manufacture of coffins, caskets, etc. He expects to do a business which will cover a large section of the South.

Knoxville—Packing-house.—A packing-house is to be erected at once. The projectors have had plans prepared by Architect Parmelee for a building two stories high and seventy by forty feet.

Knoxville—Stone Crusher.—The stone-crushing plant owned by Johnson & Haynes has been purchased by V. F. Gossett, who will operate it. The capacity of the machinery may be increased.

Lenoir City—Car Works.—Two hundred men are engaged in constructing the Lenoir Car Works and the buildings are nearly ready for machinery. A complete outfit of apparatus for manufacture of cars will be required.

Memphis—Heating and Lighting Apparatus.—The county court is receiving bids for repairing the courthouse. If repairs are made, new steam heating apparatus will be needed, also an electric-light plant.

Nashville—Sewers and Paving.—The city council has made appropriations of \$800 for a street sewer and \$7000 for macadam paving. Address the mayor.

Tennessee—State Coal Mines.—The coal mines purchased by the State for the employment of convict labor are located in Morgan county, twenty miles from Harriman. There are 208 mine openings which will be worked. The governor at Nashville may be addressed.

Virtue—Flouring Mill.—The flour mill being erected at Virtue will be provided with machinery for making roller process flour, and will contain all the latest improvements in this kind of apparatus.

TEXAS.

Dallas—Transfer Company.—The Scruggs Transfer Co. has been incorporated by G. R. Scruggs with \$30,000 capital to do a general transfer and freight business.

Dallas—Hat Factory.—James L. Carr, representing Ballard, Webb & Burnette, of Orange, N. J., is looking for a site for establishing a branch of the hat factory this concern operates. If built water-power will be used.

Galveston—Bridge.—The Galveston & Western Railroad Co. will erect a railway bridge across an arm of the bay between Galveston and Virginia Point. Chief Engineer M. W. Wanebaugh, Galveston, may be addressed.

Galveston—Coal Trestle, etc.—Fowler & McVitie will erect a coal trestle and a coal hoister to handle 600 tons daily. Improved machinery will be used. The trestle and elevator will cost \$10,000.

Houston—Bottling Works.—Work has commenced on a building to be used as a bottling plant by the Magnolia Brewing Association. It will be equipped with machinery, etc., for that purpose.

Ladonia—Ladder Company.—The Crews Ladder Manufacturing Co. has been chartered by D. H. Crews and others, with \$50,000 capital, for the purpose specified in its title.

Lockhart—Oil Mills.—Northcroft & Neib are the contractors for the oil-mill plant which it is proposed to erect in Lockhart. The mills will be supplied with the most modern machinery for manufacturing oil.

Smiley—Cotton Gin.—A. M. Stewart's cotton gin will be equipped with a modern machinery outfit which he has purchased.

Smiley—Oil Mill.—A. M. Stewart has built and equipped a cotton-oil mill of fifteen tons capacity. It will be ready for operation September 1.

VIRGINIA.

Bertha—Zinc Works.—Two of the furnaces at the Bertha Zinc Works have gone out of blast in order to have necessary repairs made. They will resume operations as soon as possible.

Buena Vista—Tannery Enlargement.—The tannery of Appold & Sons is being enlarged, and its facilities for leather production will be increased.

Lynchburg—Factory.—John Katz, Jr., has let the contract for a tobacco factory 60x132 feet, with three stories and attic. It will be one of the most complete factories in the city.

Matoaca—Cotton-mill Repairs.—The cotton mills in the Matoaca Manufacturing Co.'s plant have shut down in order to make repairs and alterations.

Norfolk—Power Station and Circuit.—The motive power for the electric railway to be built in Norfolk will be supplied from a station which is to be equipped with a dynamo plant of 1000 horsepower. The circuit will contain twenty miles of wire supported by 1000 poles. J. F. McCartney, of Chicago, is the engineer.

Norfolk—Saw-mill Plant.—Whispell & Denby will increase the capacity of their plant so that they can turn out 50,000 feet of lumber daily. They will build three new dry-kilns.

Norfolk—Furniture Factory.—The building erected by Hooper & Pittman for a furniture factory has been completed and is being equipped with an outfit of machinery.

Staunton—Mill.—The new flouring mill of the White Star Milling Co. is completed and ready for operation. The machinery has been received and put in place. The plant will turn out 500 barrels of flour per day.

Varina Grove—Bridge.—The board of supervisors of Henrico county will construct a bridge over Almond creek in Varina district, and have appropriated a fund for the purpose.

WEST VIRGINIA.

Charleston—Woodenware Works.—The plant of the Sprinkle Pulley & Woodenware Co. will probably be removed from Kanawha City to Charleston. It is stated that the works will be enlarged and their facilities increased.

Charleston—Electrical Apparatus.—The Economy Novelty Co. has been chartered by J. Duncan Harris and others, of Baltimore, Md., who have formed a corporation for manufacturing electrical appliances.

Elkins—Car Shops.—An addition is being made to car shops at Elkins for the purpose of increasing the manufacturing facilities. The addition will nearly double the size of the plant.

Grant County—Saw Mill.—Barndollar & Hughes, it is stated, will build a large saw mill for working a timber tract they have purchased in Grant county on the line of the West Virginia Central Railroad. They are from Everett, Pa.

Keyser—Woolen Mill.—Work is being pushed on the woolen mill being erected by A. C. Scherr & Bro. It will be furnished with a complete outfit of improved machinery. It is expected to have the plant in operation in a few weeks.

Moundsville—Glass Factory.—The improvements to the Fostoria Glass Co.'s plant will consist of a new furnace, which is now being put in the plant.

Wheeling—Brewery Addition.—An addition will be built to the Reymann brewery for the purpose of enlarging its storage and manufacturing facilities. The addition will be of iron, 100x120 feet.

BURNED.

Benton, Ky.—J. F. Burkholder's steam saw-mill plant; loss estimate \$6000.

Benton, Ky.—The Paducah, Tennessee & Alabama Railway station; loss estimate \$5000.

Brewton, Ala.—Six stores; loss \$11,000.

Bristol, Tenn.—Hotel St. Lawrence; loss estimate \$10,000.

Grafton, W. Va.—The Masonic Temple and Eastern dry-goods store; loss estimate \$14,000.

Kansas City, Mo.—Stockyard sheds and horse market; loss estimate \$10,000.

Kansas City, Mo.—Whitman & Barnes Manufacturing Co.'s farm implement warehouse; loss to building \$7000; to stock \$90,000.

Louisville, Ky.—C. J. Olmstead's lumber-yard; loss estimate \$6000.

Pulaski, Va.—The Pulaski block, owned by J. Rush Miller; loss estimate \$15,000.

Snow Hill, Md.—Three hotels, two banks, one church and the courthouse and jail, also seventy dwellings; loss estimate \$300,000; insurance \$70,000.

St. Louis, Mo.—The Voightman paper-box factory owned by W. Voightman; loss \$3000.

BUILDING NOTES.

Baltimore, Md.—Courthouse Site.—The courthouse commission has decided to pay \$97,500 for a part of the site for the new courthouse owned by Charles J. Bonaparte.

Baltimore, Md.—Dwellings.—J. L. Bowen has obtained permission to erect five three-story brick dwellings on Madison avenue to cost about \$15,000. He will also build four three-story brick dwellings on Whitelock street.

Baltimore, Md.—Engine-house.—Plans have been prepared and bids are solicited for building a house for No. 17 engine company. Building Inspector Oster will inform. It will be of brick, with redstone trimmings. The sum of \$10,000 is appropriated for it.

Beverly, W. Va.—Church Addition.—The Presbyterian church will be enlarged and realtered.

George W. Lewis, chairman of building committee, will receive bids.

Bowie, Md.—Dwelling.—A building for a residence and asylum for Jesuit priests is to be erected.

Bowie, Md.—Church.—The Jesuits will erect a church of wood to cost \$8000. It will have a stone basement, and will be 62x143 feet in dimensions, with a tower ninety feet high. Thos. C. Kennedy, of Baltimore, is preparing plans.

Charleston, S. C.—College.—The board of trustees of the Winthrop Normal College are to have plans prepared for college buildings.

Charleston, W. Va.—Bank Offices.—The Kanawha National Bank is to have new quarters, to be provided with security vault, tile floor, new banking fixtures and furniture.

Charlottesville, Va.—Depot.—It is reported that the Chesapeake & Ohio will build a new passenger station of brick.

Chattanooga, Tenn.—Prison.—The penitentiary commission has decided to build a prison with cells to accommodate several hundred convicts at the Brushy mountain coal fields.

Chattanooga, Tenn.—Store.—Judge R. J. Morgan, of Memphis, will erect a building for stores and offices.

Cockeysville, Md.—Church.—The Methodist church to be built will cost \$4635. It will be constructed of Beaver Dam marble, which is presented to the congregation Oliver Perkey, of Parkton, is the contractor.

Columbia, S. C.—Church.—The colored congregation of Sidney Park Church will build a brick edifice, and have raised a fund for that purpose.

Covington, Va.—Churches.—It is stated that two churches will be built in Covington. One will be erected by the Catholics and the other by the Northern Methodist congregation.

Crisfield, Md.—Bank.—A bank building is being erected at Crisfield.

Fort Worth, Texas—Residence.—E. E. Chase will rebuild his residence, Bellevue Hall, recently destroyed by fire. The mansion was valued at over \$100,000.

Frankfort, Ky.—Penitentiary Cells.—S. C. Cryer & Co. have been awarded the contract for building the 400 cells for the penitentiary. The contract price is \$55,000.

Gainesville, Fla.—Odd Fellows' Home.—Hon. A. J. Russell, of Jacksonville, will give information to the Gainesville Home.

Grafton, W. Va.—The Masonic Temple reported as burned in another column is to be rebuilt at once. J. W. Herr may be addressed.

Greensboro, N. C.—Church.—The Greensboro Methodist church, now being erected, will cost \$30,000. It will be 122 feet long, eighty-nine feet wide, and be built of Mount Airy granite, with a steeple 123 feet high.

Jacksonville, Fla.—Warehouse.—The Clyde Steamship Co. will erect a warehouse to contain rooms for offices on its wharves.

Kansas City, Mo.—Courthouse.—The acting supervising architect writes from Washington that contracts for the basement masonry and iron work of the courthouse have been let, and that bids for the masonry of the superstructure will be solicited about November 1.

Laredo, Texas—Army Quarters.—Plans have been prepared for six double buildings for officers' quarters at Fort McIntosh. The quartermaster-general United States army at San Antonio may be addressed.

Laurel, Md.—Store.—F. M. Baker will build a dwelling and store combined at Laurel.

Leesburg, Va.—Courthouse.—A committee of the board of supervisors is estimating the cost of a new courthouse, and is consulting with architects. J. C. Coleman may be addressed.

Little Rock, Ark.—Hospital.—Steps are being taken to secure or build a structure for hospital purposes.

Mount Wilson, Md.—Hotel.—James B. Councilman is interested in the erection of a proposed hotel.

Nashville, Tenn.—Prison.—The prisons to be built by the State in connection with a prison farm and coal mines will be located in Franklin and Morgan counties, respectively. They will be constructed of stone and are to cost \$140,000 in all. The governor may be addressed.

New Orleans, La.—Engine-house.—A chemical fire engine-house will be erected in the suburbs. Address the board of fire commissioners.

New Orleans, La.—Hotel.—Mrs. C. B. Solari has obtained permission to erect a hotel on Bourbon street to cost \$48,000. The building is to be seven stories high, and will contain all the latest improvements.

Newport, Ark.—School.—Plans are being prepared for a school building to be erected in Newport.

Newport, Ky.—Officers' Quarters.—Bids for erecting the officers and soldiers' quarters at Fort Thomas will be received until August 21. The work will consist of two double sets of officers' quarters and one double company barracks. Lieut. R. B. Turner will give information at Newport. Estimated cost \$75,000.

Ocala, Fla.—Academy.—The secretary of the school district writes that the Howard Academy, recently burned, will be probably rebuilt when the insurance is adjusted.

Oglethorpe, Ga.—Plans have been prepared for a courthouse. The mayor will furnish information. The building will cost about \$40,000.

Parkersburg, W. Va.—Schools.—The board of regents have awarded the contract for building the normal schools at Glenville and West Liberty to M. M. Rusk, of Charleston.

Sedalia, Mo.—The burned Geneva Hotel will be rebuilt at once at an expense of about \$3000.

Sistersville, W. Va.—School.—The board of education has decided to erect a school building.

Snow Hill, Md.—Hotels and Stores.—It is stated that several of the burned hotels and stores will be rebuilt at once.

Staunton, Va.—Church.—Emanuel Episcopal Church congregation has secured a site for a new edifice.

Sumter, S. C.—Opera-house.—The contract for building the opera-house has been awarded to J. W. McKiever for \$21,000.

Terra Alta, W. Va.—Hotel.—It is reported that N. W. Fitzgerald's hotel, recently burned, will be rebuilt at a cost of \$7500.

Washington, D. C.—Church.—St. Joseph's Catholic Church will be constructed of Hummelstown brownstone, with a square tower eighty feet high. The architect is Philip N. Dwyer.

Waxahachie, Texas.—Agricultural Station.—The State is preparing to establish an agricultural experiment station near Waxahachie. E. G. Senter, of Waxahachie, may be addressed.

Webb City, Mo.—College.—Work has begun on the foundation of what is to be known as Webb College.

Winston, N. C.—Courthouse.—The county commissioners have decided to build a courthouse and have selected a site for the building. H. E. Fries is chairman.

Wytheville, Va.—Dwelling.—Mrs. Lizzie Gravelly will have a brick mansion built in the suburbs. The Wytheville Manufacturing Co. has secured the contract.

Wytheville, Va.—Church.—The Wytheville Manufacturing Co. has secured the contract for erecting the Baptist church.

Yoakum, Texas.—Sheds.—It is stated that a large union train-shed will be erected by the railway companies which have lines to Yoakum.

RAILROAD CONSTRUCTION.

Railroads.

Augusta, Ga.—The Augusta Southern has leased the Sandersville & Tennesse narrow-gauge line for ninety-nine years. President J. U. Jackson, of Augusta, states that a third rail will be laid at once, so that trains can run to Tennesse. Surveys are also to be made for changing the Augusta Southern and the Sandersville & Tennesse to standard gauge.

Baltimore, Md.—J. H. McCreery and others, of Washington, have made a contract to construct the Baltimore & Drum Point line from Millersville, on the Annapolis, Washington & Baltimore Railroad, to Drum Point, a distance of sixty-nine miles. Most of the road has been graded. Frank R. Biedler, of Baltimore, may be addressed.

Baltimore, Md.—It is stated that the Baltimore Traction Co. will extend its electric line, now being built in West Arlington, to Powhatan, a distance of one and a-half miles.

Benwood, W. Va.—The Benwood Southern Railway Co. has been chartered to build an electric line from Benwood to Moundsville, a distance of eight miles. The capital is \$500,000. J. F. Burcinal and Leonard Eskey, of Benwood, are among the incorporators.

Cambridge, Md.—The county commissioners have voted to subscribe \$75,000 for stock in a railway to be constructed through Cambridge to Fox creek, on Chesapeake bay. The proposed road is thirty-two miles long, and is reported to be an extension of the Philadelphia, Wilmington & Baltimore.

Chattanooga, Tenn.—The Chattanooga Company has begun surveying its proposed line from Chattanooga to the mines.

Eustis, Fla.—The South Florida is building a branch to Lake Griffin, a distance of fifteen miles. At the lake a wharf is being erected for transferring freight from steamers.

Glyndon, Md.—A company is being formed to construct an electric road to connect with the Baltimore Traction Co.'s line at Pikesville. The proposed route is about five miles long.

Houston, Texas.—The Texas Transportation Co. will expend \$350,000 in completing and improving its line between Houston and Clinton, Texas.

Milledgeville, Ga.—The Milledgeville & Asylum road is being rebalanced, and new ties are being placed under the rails.

Morgantown, W. Va.—The Drake & Stratton

Co., who are building the Fairmont, Morgantown & Pittsburg division of the Baltimore & Ohio, expect to have the line between Morgantown and Pittsburg completed by October 1. Track-laying has begun.

Nashville, Tenn.—It is stated that the Nashville & Knoxville road, now being built by a syndicate headed by Jere Baxter, of Nashville, will be extended to Harriman to connect with the Cincinnati Southern, while at Nashville it is to connect with a 7.5-mile extension of the Tennessee Midland to be constructed from the Tennessee river.

Nashville, Tenn.—The Nashville Terminal Co. has been chartered to secure right of way in the city for the Nashville & Knoxville terminal station, etc. Jere Baxter is at the head of the movement.

Nashville, Tenn.—The Nashville & Knoxville Railroad, now being constructed, will build a tunnel to reach its terminal station in Nashville.

Norfolk, Va.—The road which is to be built to Portsmouth will extend from Tucker's Crossing, on the Norfolk & Western, to the city. Surveys have been made and right of way granted except on Sixth street, in Portsmouth. Work will be commenced by the Park Road & Improvement Co. as soon as the last is obtained.

Texarkana, Texas.—The directors of the Texarkana & Fort Smith Railroad have made a contract with the Arkansas Construction Co., of Kansas City, to build that portion of the Kansas City, Colorado & Gulf line not completed from Fort Smith, Ark., to Sabine Pass, Texas. This road will be about 350 miles long and form a part of the Missouri, Kansas & Texas system.

Winchester, Ky.—A number of sidings and cattle pens are being built along the Kentucky Central road. The roadbed is being rebalanced at several points.

Street Railways.

Baltimore, Md.—The Highlandtown branch of the City & Suburban electric system has been equipped with electric motors. It is about five miles long.

Charleston, S. C.—The Enterprise Street Railway Co. is preparing to extend its line along Hasell street, and has asked permission of the city council.

Jacksonville, Fla.—H. Maynard and others have asked the city council for a franchise to operate a street railway from Villa Maynard station to Villa Maynard.

New Berne, N. C.—Material is being received for the proposed electric railway. It will be built along the principal streets of the town, also to the fair grounds in the suburbs. R. P. Williams is manager of the company.

Norfolk, Va.—The Norfolk electric road is to be built by a syndicate, of which Murray E. Verner, of Pittsburg, Pa., is the head. It will be equipped with about thirty motor cars, to be increased as business increases. Superintendent J. F. McCartney may be addressed.

Orlando, Fla.—Myron D. Brooks, of Boston, heads a syndicate that has bought the Orlando street railway. Five new cars have been ordered for the line.

Radford, Va.—The Southern Construction Co., of Roanoke, will put up the poles and wires for the electric road. The rolling stock has been purchased.

MACHINERY WANTED

If you desire to purchase machinery of any kind consult our advertising columns, and if you cannot find just what you wish, send us particulars as to the kind of machinery needed. We will make your wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. You will thus get all information desired as to prices, etc.

Boiler and Pump.—Whispell & Denby, Norfolk, Va., will add an eighty horse-power boiler to their saw-mill plant, and will also put in a fire pump.

Boilers.—James Lockhead, 1404 Pennsylvania avenue, N. W., Washington, D. C., wishes prices on two sixty horse-power horizontal tubular boilers f. o. b. cars at Berkeley Springs, Va. He will purchase of the lowest bidder.

Corliss Engine.—The Star Rice Milling Co., Crowley, La., wishes to correspond with engine builders about purchasing a Corliss engine. It would like the dimensions of a fifty horse-power engine. Address J. C. King, secretary.

Electric-light Plant, etc.—The town of Punta Gorda, Fla., wants a complete electric-light plant to include power station, wiring, lamps, etc., for a town of 1000 people and a factory. Address K. B. Harvey.

Electric-light System.—The mayor of Gainesville, Texas, has been authorized to procure an

electric-light tower for the city's use at a price not to exceed \$1500. He may be addressed.

Elevator.—The city of New Orleans will want a passenger elevator for the city hall. Address the city engineer.

Engine and Boiler.—J. Northcott, Fort Meade, Fla., wishes to buy an engine of fifteen or twenty horse-power; also a boiler of the same size, to use in a phosphate factory.

Fire Apparatus.—The city council of Fort Worth, Texas, is considering the purchase of 1000 feet of hose and a hook and ladder and truck.

Fire Apparatus, etc.—The fire committee of the Staunton (Va.) city council is considering an application from the Sears Hill Hose Co. for apparatus.

Fly-wheel.—The Memphis Electric Light Co. intends purchasing a fly-wheel to replace one which gave way recently. It is to be driven by a McIntosh, Seymour & Co. engine in the power station, and will be made from specifications.

Gas and Gasoline Engines.—J. G. Talley, Terrell, Texas, wishes to correspond with manufacturers and sales agents who desire to sell gas and gasoline engines.

Outfit for brick-making.—The Fowlkes Hardware Co., of Selma, Ala., will correspond with manufacturers of brick-making machinery. They want a complete outfit of modern apparatus for the work.

Paint-grinding Machinery.—The Birmingham, (Ala.) Paint, Oil & Roofing Co. is in the market for machinery for grinding dry paints. It wants to buy at once a crusher and one or two mills.

Phosphate Machinery, etc.—J. R. Biggs & Co., Inverness, Fla., will purchase a quantity of phosphate machinery. They want a washer that will treat from twenty to thirty tons per day; also a one-horse hoist and screen that will screen the same quantity.

Pumps.—The city of New Orleans will buy two pumps for draining canals. Address the city engineer.

Rails.—The Teche Railway Co., of St. Martinsville, La., wants to purchase enough rails to lay fifteen miles of track. They must be in good condition. They are for a three-foot gage road and are required to weigh from thirty-five to forty pounds to the yard.

Railway Equipment, etc.—The Teche Railway Co. wishes to purchase two locomotives, three passenger cars, one mail and express car, twelve flat and six box cars. They must be in good condition and suitable for a three-foot gage railway. Address Teche Railway Co., St. Martinsville, La.

Refrigeration Machinery, etc.—The city of Front Royal, Va., needs a complete plant for manufacturing ice. The Front Royal & Riverton Improvement Co. wishes to obtain estimates, etc., for supplying all the necessary apparatus. The town has a population of 2200.

Water works, Electric-light Plant, etc.—The city of Franklin, Ky., intends putting in a system of water works and an electric-light plant. M. S. Harris, mayor, desires to correspond with corporations who make estimates for this work. Franklin has 2500 population and is the site of several large mills.

Woodworking Machinery.—Whispell & Denby will increase the equipment of their mill with a three-saw gang edging machine.

Building Material.—Contractor W. K. Holt, Chase City, Va., wants prices on metal ceiling and roofing and plaster; also heating apparatus for church use.

Carbons.—The city of Fort Worth, Texas, wants 35,000 carbons for electric lamps. Address the Board of Public Affairs.

Jail-heaters, etc.—Heaters, gas fixtures, sewer-pipe, etc., are needed for the jail at Norfolk, Va. Address chairman of committee on public property.

School Furniture.—W. R. King, Lawrenceburg, Tenn., wishes to purchase desks for the school recently erected at that place.

Terra-cotta Pipe.—The street committee of Durham, N. C., will purchase a quantity of terra-cotta pipe. Address secretary of town commissioners.

SOUTHERN FINANCIAL NEWS.

Abingdon, Va.—The Bank of Abingdon, capital \$72,000, and the Exchange & Deposit Bank, capital \$153,000, have been forced to suspend payment.

Adel, Ga.—It is reported that the firm of A. McQueen & Co. have made an assignment. Liabilities are stated to be \$100,000.

Atlanta, Ga.—Hon. W. A. Hemphill, of the committee in charge, writes that the depositors of the Gate City National Bank, suspended, have been paid in full. The stockholders will probably receive 75 per cent. of their money invested.

Baltimore, Md.—The Southern Electric Co., which recently assigned, has been allowed to resume operations by order of the court to complete unfinished contracts.

Brunswick, Ga.—The First National Bank, recently suspended, will be reorganized as a State bank by permission of Comptroller Eckels, and will resume business as soon as possible.

Charlottesville, Va.—The city will issue \$10,000 worth of bonds for new school and for street paving. The issue is authorized by vote of the city council.

Dallas, Texas.—The Dallas Electric Co. has decided to increase its capital from \$400,000 to \$600,000.

Fredericksburg, Va.—W. J. Moseley, of Philadelphia, and H. W. Wallace have chartered the First National Fire Insurance Co. with \$100,000 capital. Fredericksburg will be the home office.

Gadsden, Ala.—The Etowah Mining Co., which operates mines at Attalla and Crudup, Ala., has given a deed of trust to W. M. Nixon, of Gadsden, in favor of its creditors. Its assets are estimated at \$102,073.14 and liabilities only about one-fourth of that amount.

Houston, Texas.—The Texas Transportation Co. has given the Atlantic Trust Co. of New York a \$350,000 mortgage to secure bonds to be issued for railway construction.

Louisville, Ky.—The J. B. Wathen & Bro. Co. will issue \$100,000 in 6 per cent. bonds to be used for obtaining money to carry on business.

Lynchburg, Va.—The recent issue of \$10,000 worth of municipal 5 per cents. has been taken at nearly 4 per cent. premium by investors.

Memphis, Tenn.—Stockholders of the Yazoo & Mississippi Valley Railroad have ratified a mortgage to the United States Trust Co. to secure 28,000 4 per cent. bonds, being part of a mortgage for \$25,000,000 given by the Illinois Central system, and due in 1953.

Richmond, Va.—The Finance Trading Co. has declared a 3 per cent. dividend on the \$100,000 of capital stock. It has been organized but three months.

Richmond, Va.—The century bonds to be used in refunding the State debt have been issued to the Central Trust Co. of New York, the Mercantile Trust & Safe Deposit Co. of Baltimore and the Planters' National Bank, of Richmond, to be given out to holders of receipts for old securities.

Roanoke, Va.—The Roanoke Safe Investment Co. has been chartered with James A. Gale, president, and H. M. Darnall, treasurer. The capital is \$14,000.

Roanoke, Va.—E. Didier, grocer and contractor for public work, has made an assignment. Liabilities are estimated at \$10,000.

San Antonio, Texas.—The city will issue \$240,000 in 6 per cent. notes to pay the claim of the San Antonio National Bank for funds advanced the city.

Springfield, Mo.—The Springfield Savings Bank has suspended. Assets are \$118,233.45 and liabilities \$88,000.

St. Louis, Mo.—The National Cornice Co. has made an assignment. The liabilities are \$20,000 and assets about the same.

Washington, D. C.—The banking-house of Mayse & Co. has been obliged to suspend.

Wheeling, W. Va.—The Exchange Bank has temporarily suspended payment. Its capital is \$200,000.

Wilmington, N. C.—Stockholders of the Atlantic National Bank have approved the plan of increasing the capital to \$200,000.

Winchester, Va.—The Commonwealth Fire Insurance Co. has been chartered with \$106,000 capital. Its home office will be at Winchester.

The Correspondence School of Mechanics, Scranton, Pa.

Ques.—What is the Correspondence School of Mechanics?

Ans.—It is an educational institution intended to meet the wants of machinists, mechanics, locomotive, stationary and marine engineers, firemen and others interested in mechanical pursuits who cannot afford to quit work to attend the regular technical schools in order to obtain the education which they need. It teaches mechanical drawing and the theory of mechanics by correspondence.

Ques.—What are the branches taught?

Ans.—Arithmetic, algebra, geometry, trigonometry, elementary mechanics, hydromechanics, pneumatics, heat, mechanical drawing, steam and the steam engine, strength of materials, applied mechanics, boilers, machine design, electricity and everything included in a complete mechanical engineering education.

Ques.—Are all these branches taught by mail?

Ans.—Yes. There are now over 600 students studying in this school who are making good progress.

Ques.—What qualifications are required to enroll as a student, and when can students commence?

Ans.—The only qualification necessary is to know how to read and write; students can begin at any time.

Ques.—How is instruction given by mail?

Ans.—In place of the text-books of the regular schools, the students receive carefully prepared and liberally illustrated instruction papers and mechanical drawing plates covering all the subjects embraced in the complete course. These are accompanied by question papers containing questions upon the subjects treated of and problems based upon the principles explained. The student studies the first instruction paper and writes the answers to the questions and problems

in the accompanying question paper and sends his work back to the school. This work is carefully examined by competent instructors, and if errors have been made the necessary help is given, and it is returned to be done over. The student is furnished with blanks with which to write for an explanation of anything in the instruction paper he may not understand. The student is kept studying each instruction paper until he has a thorough knowledge of the subject treated of, when he receives a passing mark on the records of the school and is advanced to the next instruction paper.

Ques.—Is it possible to teach mechanical drawing by mail?

Ans.—Yes. The information given is full and clear, the exercises are practical and instructive and the drawings furnished to be copied are worked out in detail. Persons who will apply themselves can learn not only to draw but to design machinery.

Ques.—What advantage has this method of study over that of the regular schools?

Ans.—An education is procured without leaving home or losing time from work. The student can take his own time to study. He has his teacher always at hand. He can advance according to his ability and time without reference to other students. Should sickness prevent him from studying he does not lose standing. The cost of the scholarship is less than tuition in other schools. The best way to remember a thing is to write it down.

Ques.—What are the scholarships?

Ans.—The branches taught are divided into two so-called scholarships: the complete and the mechanical drawing scholarships. Holders of the complete scholarship are entitled to instruction in all the branches taught in the school. The mechanical drawing scholarship includes the first nine branches mentioned above.

Ques.—What are the prices of scholarships?

Ans.—The complete scholarship costs \$15.00 in advance or \$40.00 in instalments. The mechanical drawing scholarship costs \$25.00 in advance or \$30.00 in instalments.

Ques.—How are the instalments paid?

Ans.—Ten dollars with the application for admission and the balance in monthly instalments of \$5.00 each.

Ques.—If a student is unable to pay his instalments promptly does he lose his scholarship and the money he has paid?

Ans.—No. If on account of sickness or any reasonable cause a student is unable to pay promptly the time of payment is extended.

Ques.—What are the expenses connected with the course?

Ans.—Only those of postage, stationery and that of instruments and material to do the mechanical drawing work. By an arrangement with the Technical Supply Co., of Scranton, we are able to furnish students with these at very reasonable prices.

Ques.—Are students required to purchase text-books?

Ans.—No. The instruction papers form a complete text-book and are all that are necessary.

Ques.—Are diplomas given to students completing the course?

Ans.—The graduate receives a diploma stating that he has completed the course of study embraced in his scholarship, and that he has successfully passed an examination in all the branches.

Ques.—For whom is this school intended?

Ans.—Machinists, mechanics, draughtsmen, engineers, firemen and all connected with the mechanical industries who are anxious to advance. It is an opportunity for them to obtain a technical education necessary to secure better positions and better pay. It is the only way to get an education without leaving home or quitting work.

Ques.—Does it require a long time to complete the course of study?

Ans.—No. The instruction papers are carefully and concisely written by competent mechanical engineers. Everything unimportant is omitted and only that retained which is necessary to make clear to the student what he must know. The course is as short as is consistent with thoroughness. The complete course requires for those who can only devote a few hours after work to study about eighteen months, the mechanical drawing course about nine months.

Ques.—How can I obtain more information about the school?

Ans.—By writing to the Correspondence School of Mechanics, Scranton, Pa. They will gladly send you a free circular of information which contains all particulars of the course of study, method of instruction, terms, etc.

Picturesque Route to the Fair.

No other line offers the variety of scenic interest between New York and Chicago that is enjoyed by World's Fair tourists via the Baltimore & Ohio Railroad. Passing through Philadelphia, Baltimore, Washington, the capital of the nation, and by way of Harper's Ferry and the historic Potomac valley to the Allegheny mountains, which are crossed at an elevation of 3000 feet above the sea, the traveler sees the arena of the activity of the nation as well as the principal historical features and scenic wonders of the East. Low rates.

Half Rate Excursions to the World's Fair.

The Baltimore & Ohio Railroad Co. will run a series of special excursions to the World's Fair, for which excursion tickets to Chicago will be sold at the rate of one fare for the round trip from Baltimore and all stations west of there as far as the Ohio river. The dates selected are August 1, 8 and 17. The special trains will consist of first-class day coaches equipped with lavatories and other toilet conveniences, and an experienced tourist agent and a train porter will accompany each train to look after the comfort of passengers. Stops for meals will be made at meal stations en route. The tickets will be valid for the outward journey on the special trains only, excepting that from way points they will be honored on local trains to the nearest station at which the special trains are scheduled to stop. They will be valid for return

journey in day coaches on all trains leaving Chicago within ten days, including date of sale.

Train will leave Baltimore at 9.30 A. M. and Washington at 10.35 A. M. Arrive Chicago next day at 1.15 P. M.

Round-trip rate \$17.00.

Remember the dates—August 1, 8 and 17.

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